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Introduction

Purpose

The Postal Service has five mail processing categories for mailpieces:

- a. Letters.
- b. Flats.
- c. Machinable parcels.
- d. Irregular parcels.
- e. Nonmachinable parcels.

The Postal Service assigns each mailpiece to one of these mail processing categories based on the physical dimensions and characteristics of the mailpiece using the longest dimension as the length, regardless of the placement or orientation of the delivery address on the piece. USPS standards exist so that mailers can design mailpieces that the Postal Service can effectively process on our sorting machines.

This publication is intended to provide guidance for mailers who design letter-size mailpieces, and especially automation-compatible designs. Printers, graphic artists, forms designers, envelope manufacturers, and computer programmers can find useful information from basic addressing to technical specifications.

This publication is based on *Mailing Standards of the United States Postal Service*, Domestic Mail Manual (DMM), which is the final authority on domestic mailing standards. The Postal Service routinely updates the DMM. The DMM contains the standards governing domestic mailing services and is available on the Postal Explorer Web site at pe.usps.com. If you are not familiar with the organization and numbering system in the DMM, a tutorial is available on the Postal Explorer Web site.

Notice 123, *Price List*, is the published list of USPS prices and is available on the Postal Explorer Web site at pe.usps.com/.

Some of the information in this publication is technical. For additional assistance, contact your local Post Office.

More Information

Online Resources

Addressing

Publication 28, *Postal Addressing Standards*, describes addressing for the best service. It is available online at <https://pe.usps.com/cpim/ftp/pubs/Pub28/pub28.pdf>.

Addressing Software

For information on addressing products and services, go to the PostalPro Web site at *Postalpro.usps.com* or contact the National Customer Support Center (NCSC) at 800-238-3150.

Domestic Mail

The DMM is the Postal Service manual that contains the mailing standards governing domestic mail services, descriptions of mail classes, the conditions governing their use, and eligibility. The DMM is updated routinely and is available free of charge on the Postal Explorer Web site at *pe.usps.com*.

The DMM provides further information on many of the topics discussed in this publication, as follows:

- a. See DMM 201.3 for information about machinable and automation letters and cards (discussed in chapter 2).
- b. See DMM 201.2 for information about physical standards for nonmachinable letters (discussed in chapter 3).
- c. See DMM 201.3 for information about booklets (discussed in chapter 4).
- d. See DMM 201.3 for information about letter-size pieces containing discs (CDs or DVDs) (discussed in chapter 5).
- e. See DMM 505.1 for information about Business Reply Mail items (discussed in chapter 6).
- f. See DMM 505.2 for information about Courtesy Reply Mail items (discussed in chapter 7).
- g. See DMM 505.2 for information about meter and PC Postage reply mail (discussed in chapter 8).
- h. See DMM 505.2 for information about permit reply mail (discussed in chapter 9).
- i. See DMM 202.8 for information about facing identification marks (FIMs) (discussed in chapter 10).

Latest News

The DMM Advisory keeps you informed about mailing issues that are important to your business. You can find updates to our mailing standards and prices, information about our Web tools, and helpful reminders about mailing issues. To subscribe to the DMM Advisory or to send comments and

suggestions, email us at dmmadvisory@usps.com. To subscribe, simply indicate “subscribe” in the subject line.

The *Postal Bulletin* is the official source for updates to policies, procedures, forms, and operational information about the Postal Service. The Postal Service publishes an edition every 2 weeks, and both current and archived editions are available through the Postal Explorer Web site at pe.usps.com; under “Publications,” click on *Postal Bulletin*. To subscribe, submit your credit card order by telephone by calling 800-STAMP-24.

Postal Explorer

The Postal Explorer Web site at pe.usps.com is an online library of postal information designed for business mailers. It puts a wealth of postal information at your fingertips in an easy-to-use format. The powerful search feature lets you quickly find information in a single publication or across a range of publications. You can view a publication by clicking on the publication title.

Also available on the Postal Explorer Web site are the following items:

- a. *Mailing Standards of the United States Postal Service*, International Mail Manual (IMM).
- b. Domestic, international, and business postage calculators.
- c. ZIP Code Lookup.
- d. Zone Chats.
- e. Postage statements.
- f. Templates for designing Business Reply Mail (BRM) and Courtesy Reply Mail (CRM) at <https://pe.usps.com/MailpieceDesign/Index?ViewName=ABRMIntroduction>.
- g. Artwork for creating BRM at <https://pe.usps.com/MailpieceDesign/Index?ViewName=ABRMIntroduction>.
- h. Other Postal Service publications.

Prices

Notice 123, *Price List*, provides retail and commercial prices for domestic and international services in a concise and accessible format. Available on the Postal Explorer Web site at pe.usps.com. The current edition of Notice 123 is available on the Postal Explorer Home Page.

Quick Service Guides

Each Quick Service Guide provides a summary of the applicable standards in the DMM. The Quick Service Guides summarize the mailing standards for a particular class of mail or preparation option, and they provide links to the DMM. The Quick Service Guides are available on the Postal Explorer Home Page, and topics include the following:

- a. Retail letters, flats, and parcels.
- b. Commercial letters and postcards.
- c. Commercial flats.
- d. Commercial parcels.
- e. Additional services.

- f. Basic standards for all mailing services.
- g. Special standards.
- h. Reference.

Training

“Mail Design Professional” is a self-study course that helps you to design mailpieces with an emphasis on automated mail processing. The course provides information on the classes of mail, mail processing categories (shapes), and basic presort. The course is recommended for all mailers and is available on the Business Mail Academy Web site at <http://nced.com/bma>; under “Business Customer Courses,” click on *Start Online Course*.

Postal Groups, Activities, and People

National Postal Forum

The National Postal Forum (NPF) is an educational and trade show event for the mailing industry held annually at different locations throughout the nation. For more information, visit the NPF Web site at npf.org.

Postal Customer Councils

Most areas have a local Postal Customer Council (PCC), which can give you tips from experienced mailers who have successfully developed business mailing programs. PCCs have general meetings to discuss Postal Service issues. To find a PCC near you, go to <http://about.usps.com/postal-customer-council/pcc-locator.htm>.

Postal Service Seminars

The Postal Service offers seminars on direct mail at selected sites around the country. Your local business mail entry office can tell you when seminars are offered in your area. To find your local business mail entry office, go to <https://postalpro.usps.com/node/1623>.

Postal Service Specialists

The following USPS personnel can provide assistance in many areas:

- a. Postmasters: Your local postmaster can help you with many basic questions about preparing your presorted mailing. However, there are other postal specialists to help you with more complex technical issues, including the others listed in this section.
- b. Business Service Network representative: The Business Service Network (BSN) is a nationwide network dedicated to providing service support to the largest mailers of the U.S. Postal Service. To find your local BSN representative, go to <https://ribbs.usps.gov/locators/find-bsn.cfm>.

- c. Mailpiece Design Analysts: Mailpiece Design Analysts (MDAs) specialize in the design of mail for effective processing on USPS automated equipment, and they are resources for Intelligent Mail information. To find an MDA, go to *pe.usps.com*; click on *Business Solutions*; and click on *Mailpiece Design Analyst*.
- d. Mailing Standards Specialists: Located in various districts of the U.S. Postal Service and supported by the business mail entry manager, these specialists are excellent resources for advice on DMM standards.
- e. Business Mail Entry Managers: Located in districts and supported by the Pricing and Classification Service Center (PCSC), these managers are experts on the regulations described in the DMM and can give you advice if you want to try something new. To find your district business mail entry office, go to *pe.usps.com*; click on *Business Solutions*; and click on *Business Mail Entry Locator*.

Non-USPS Resources

Some mail-related services are handled by private companies rather than by the Postal Service, including the following:

- a. Mailing lists: To purchase or rent a mailing list, search for “mailing list” on the Internet.
- b. Postage evidencing systems: Postage meters and PC Postage products are collectively identified as “postage evidencing systems” — search for this term on the Internet.
- c. Vendors: Product categories include postage meters and PC Postage products. Additional information on product categories and authorized providers is available online at <https://www.usps.com/business/postage-options.htm>. To lease a postage meter, search for “postage meter” on the Internet.
- d. Presort service bureaus: To find a presort service bureau, search for “presort service” on the Internet.

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1 Letter-size Basics

1-1 Types of Letter-size Mail

In addition to determining the mail processing category using the weight and shape of the mailpiece, the Postal Service also classifies mailpieces by the way they are prepared. The Postal Service bases these classifications on how efficiently Postal Service equipment can process your mailpieces, which fall under one of the following three categories:

- a. “Automation” letter-size mailpieces are machinable and contain correct delivery point information in the imprinted Intelligent Mail barcodes. Letters and cards can receive postage discounts if they meet automation standards.
- b. “Machinable” mailpieces can be sorted on Postal Service processing equipment. Sorting mail on automated equipment is more efficient than manual processing, so properly prepared machinable pieces can qualify for lower prices — but not for Automation prices because achinable pieces do not have a qualifying barcode.
- c. “Nonmachinable” mailpieces cannot be processed by Postal Service equipment. Because nonmachinable pieces must be sorted manually, higher postage prices might apply because of the additional postal handling needed.

1-2 Physical Standards for Letters

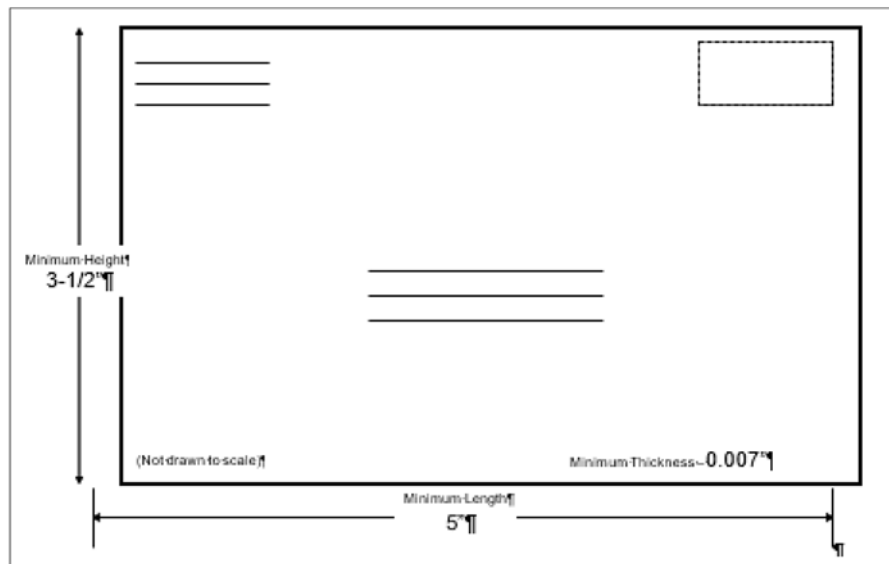
1-2.1 Dimensional Standards for Letters

The Postal Service defines letter-size mail as follows:

- a. Not less than 5" long, 3-1/2" high, or 0.007" thick. See [Exhibit 1-2.1](#).
- b. Not more than 11-1/2" long, 6-1/8" high, or 1/4" thick.
- c. Rectangular, with four square corners and parallel opposite sides. Letter-size, card-type mailpieces made of cardstock may have finished corners that do not exceed a radius of 1/8".
- d. Having the following maximum weights:
 - (1) Retail Letters: 3.5 ounces. First-Class Mail letter-size pieces over 3.5 ounces are charged at the large envelope (flat) prices.
 - (2) Machinable and Automation Letters and Cards:
 - (a) Automation enveloped letters and cards: 3.5 ounces.

- (b) Machinable enveloped letters and cards: 3.5 ounces.
- (c) Booklets and folded self-mailers: 3 ounces.

Exhibit 1-2.1

Minimum Letter Dimensions, Mailpieces 1/4" Thick or Less**1-2.2 Length and Height**

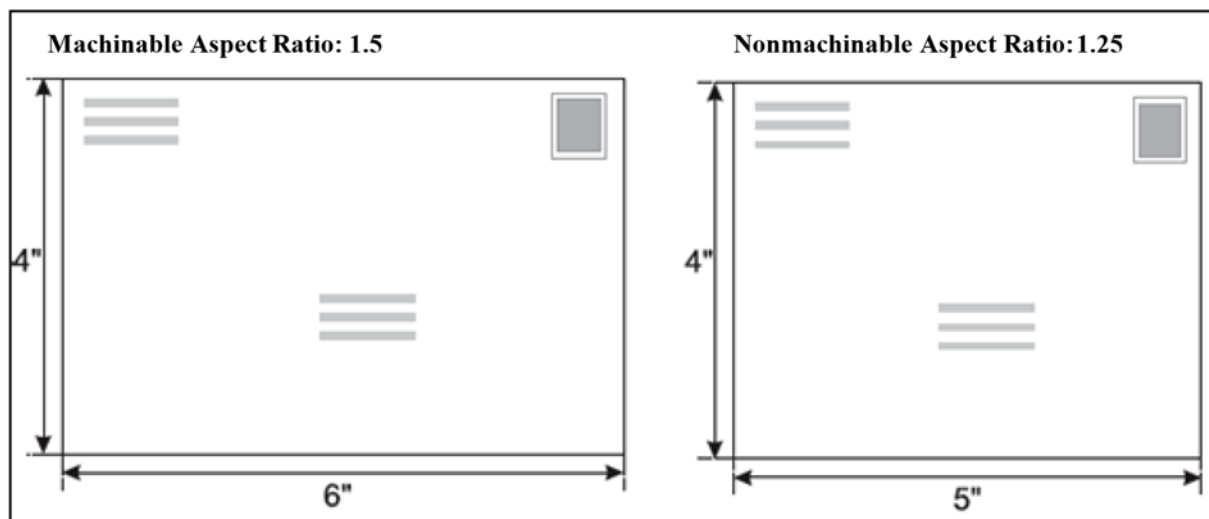
To determine the mailability or machinability of a letter-size mailpiece, the length is the dimension parallel to the delivery address as read; the height is the dimension perpendicular to the length. Because the location of the delivery address on a letter-size mailpiece determines which dimensions are the length and height, the placement of the address may make a piece nonmailable or nonmachinable.

Note: When listing dimensions, the normal practice is to list length first — e.g., a dimension listed as 4" by 6" usually indicates that the length is 4".

1-2.3 Aspect Ratio

The aspect ratio is the length of the mailpiece divided by the height. For a letter-size piece to be machinable, this number must be between 1.3 and 2.5, inclusive. This ensures that the mailpiece travels properly on USPS machinery. Pieces that are too tall relative to their length tend to tumble during processing. See [Exhibit 1-2.3](#).

Exhibit 1-2.3

Examples of Aspect Ratio (Not Drawn to Scale)

1-3 Address Placement for Letters

1-3.1 Nonmailable Placement of the Delivery Address

The placement of the delivery address on a letter-size mailpiece may make a piece nonmailable or nonmachinable.

A letter-size mailpiece is nonmailable if any of the following circumstances apply:

- a. The length (the dimension parallel to the delivery address) is less than 5".

Example: For a letter-size piece that is 4" by 6" (which indicates that the delivery address is parallel to the 4" dimension, which means that its length is 4"), its 4" length is less than the minimum required length of 5". This piece is nonmailable.
- b. The height (the dimension perpendicular to the length) is less than 3 1/2".

Example: For a mailpiece (including a letter-size mailpiece) that is 6" by 3" (which indicates that the delivery address is parallel to the 6" dimension, which means that its length is 6" and its height is 3"), its 3" height is less than the minimum required height of 3 1/2". This piece is nonmailable.
- c. The aspect ratio (length divided by height) is not between 1.3 and 2.5, inclusive.

Example: For a letter-size piece that is 5" by 8" (which indicates that the delivery address is parallel to the 5" dimension, which means that its length is 5" and its height is 8"), its aspect ratio (5" length divided by 8" height) is 0.625, which is not between 1.3 and 2.5, so it is mailable but as a nonmachinable letter.

1-3.2 Proper Delivery Address Placement

On a letter-size piece, the entire delivery address should be within the Optical Character Reader (OCR) read area, which is defined as follows:

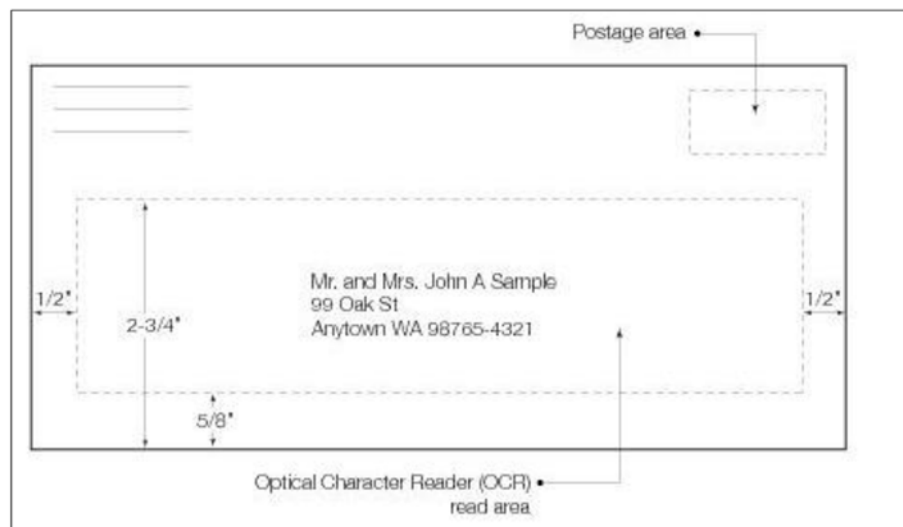
- a. Left: 1/2" from the left edge of the piece.
- b. Right: 1/2" from the right edge of the piece. (The Postal Service recommends 3/4" because of lead edge fold over.)
- c. Top: 2-3/4" from the bottom edge of the piece.
- d. Bottom: 5/8" from the bottom edge of the piece.

See [Exhibit 1-3.2](#).

Having the delivery address within the OCR read area gives the Postal Service the best opportunity to read the address and to apply a correct routing barcode to the mailpiece.

Exhibit 1-3.2

OCR Read Area



1-3.3 Proper Return Delivery Address Placement

The return address tells the Postal Service where the sender of a mailpiece wants it returned if the Postal Service cannot deliver it. Place the return address in the upper-left corner of the address side of the mailpiece or the upper-left corner of the addressing area. The requirements for a letter-size piece are as follows:

- a. Left: 1/2" from left edge of the piece.
- b. Top: 6" from the bottom edge of the piece.

2 Machinable and Automation Letters and Cards

2-1 Physical Standards for Machinable and Automation Letters and Cards

2-1.1 Basic Standards for Automation Letters and Cards

Letters and cards claimed at any machinable, automation, or at USPS Marketing Mail carrier route price, must meet the standards in the DMM. Unless prepared as a folded self-mailer, booklet, or postcard, each machinable or automation letter must meet one of the following characteristics:

- a. Be a sealed envelope (the preferred method).
- b. If unenveloped, be sealed or glued completely along all four sides.

2-1.2 Paper Weight

Mailers must use mailpieces constructed from high tear strength paper stock. For envelopes or letter-sized mailpieces sealed along all four sides, mailers must use paper with a minimum basis weight of 50-pound book-grade paper. The conversion table in [Exhibit 2-1.2](#) provides a cross-reference for basis weights of various papers.

Note: In this Publication 25, all references to paper basis weight are for book-grade paper unless otherwise stated.

Exhibit 2-1.2

Paper Basis Weight Conversion Table

Paper basis weight is based on the weight of 500 sheets of one of the following grades of paper:

- 25" x 38" sheets of book-grade paper.
- 17" x 22" bond-grade paper.
- 20" x 26" sheets of cover-grade paper.
- 24" x 36" sheets of newsprint.

For example, if 500 sheets of book-grade paper weigh 39 pounds, the paper is considered 39-pound book paper.

Equivalent Values

Book Weight	Bond Weight	Cover Weight	Newsprint Weight
39	15	21	35
40	16	22	36
50	20	27	45
55	22	30	50
60	24	33	55
70	28	40	64
75	30	41	68
80	31	44	73
90	36	50	82
100	40	56	91
110	44	60	100
128	50	70	116

2-1.3 **Dimensions and Shape**

Each machinable or automation letter-size piece must be rectangular and must meet the following standards (see chapter 4 for booklets and folded self-mailers):

- a. For length, no more than 11-1/2" or less than 5".
- b. For height, no more than 6-1/8" or less than 3-1/2".
- c. For thickness, no more than 1/4" or less than either of the following:
 - (1) 0.007" thick if no more than 6" long and 4-1/4" high.
 - (2) 0.009" thick if either more than 6" long or 4-1/4" high, or both.

2-1.4 **Maximum Weight**

The following maximum weight limits apply:

- a. Machinable enveloped letters and cards: 3.5 ounces.
- b. Automation enveloped letters and cards: 3.5 ounces.
- c. Booklets and folded self-mailers: 3 ounces.

2-1.5 **Heavy Letter Mail (More Than 3 Ounces)**

Heavy letter mail — i.e., letter-size pieces more than 3 ounces — must be in a sealed envelope, may not contain stiff enclosures, and must have an Intelligent Mail barcode (IMb) with a routing code in the address block.

2-1.6 **Postcard**

Mailpiece designers must prepare postcards from paper stock meeting the industry standard for a basis weight of 75 pounds or greater, with less than 71.25 pounds (measured weight for 500 25" by 38" sheets). The Postal Service does not recommend high-bulk stock. The stock must be free from ground wood unless coated with a substance adding to the stock's ability to resist an applied bending force. A double postcard not prepared with all edges sealed must have the folded edge at the top or bottom. The open edge of the double postcard must be parallel to the address and must be secured with one tab (or other permitted closure) in the middle of the length. Pieces claimed at First-Class Mail automation card prices must meet the standards in the DMM.

2-1.7 **Aspect Ratio**

The aspect ratio (i.e., the length of the mailpiece divided by height) must be between 1.3 and 2.5, inclusive. For definitions of length and height, see chapter [1](#).

2-1.8 **Wraps and Closures**

An automation-compatible letter-size mailpiece may not be polywrapped, polybagged, or shrinkwrapped; may not have clasps, strings, buttons, or similar closure devices; and may not have protrusions that might impede or damage the mail or mail processing equipment.

2-1.9 **Staples and Saddle Stitching**

Mailpiece designers may use staples or saddle stitching only on booklet-type mailpieces to join the bound edge (spine). Inserted staples or stitching must be parallel to the bound edge, must be set tightly and securely, and must have no protrusions that might impede or damage the mail or mail processing equipment.

2-1.10 **Rigid and Odd-shaped Items**

The Postal Service prohibits rigid items (e.g., pens, pencils, keys, bottle caps) within machinable and automation letter-size mailpieces. The Postal Service permits reasonably flexible items (e.g., credit cards), and it permits odd-shaped items (e.g., coins and tokens) if firmly affixed to and wrapped within the contents of the mailpiece and envelope to allow for automated processing.

2-2 Flexibility Standards for Automation Letters

2-2.1 **Machinability**

To ensure transport through automated mail processing machines, a mailpiece and its contents must bend easily when subjected to a transport belt tension of 40 pounds around an 11"-diameter drum.

2-2.2 **USPS Services for Flexibility Testing**

A mailer requesting flexibility testing for letter-size mailpieces must submit at least five mailpieces and a written request to the local postmaster or business mail entry manager for submission to the Pricing and Classification Service Center (PCSC) at least 6 weeks before the mailing date. The request must describe mailpiece contents and construction, number of pieces being produced, and preparation level.

The PCSC evaluates the piece and, if warranted, instructs the mailer to submit samples to USPS Engineering for testing. The PCSC advises the mailer of its findings. If the Postal Service approves the mailpiece, the PCSC's letter includes a unique number that identifies the piece and that serves as evidence that the piece meets the relevant standards. The mailer must include a copy of this letter with each postage statement that the mailer submits for mailings of the approved piece. If requested by the Postal Service, the mailer must show that pieces it presents for mailing are the same as those approved.

2-3 Attachments on Letter-size Mailpieces

2-3.1 **Use**

A label, sticker, perforated pocket, or release card may appear on a letter-sized mailpiece that is eligible for automation letter prices, including barcoded carrier route letters meeting automation standards. Release cards and perforated pockets may not appear on pieces mailed at First-Class Mail card prices; other restrictions on attachments to cards may apply. A USPS Marketing Mail or Periodicals letter with a label, sticker, release card, or perforated pocket must meet additional standards. These attachments must meet additional standards, including the following:

- a. A permanent label or sticker less than 0.007" thick, and a perforated pocket other than repositionable notes, must be affixed directly to the outside of the mailpiece with permanent adhesive.
- b. A relocatable label must be affixed on the outside of, or on the contents of, a reply mailpiece.
- c. Up to two release cards, each at least 0.007" thick and no more than 0.012" thick, must be secured to a letter with a liner or backing under DMM 201.3.13.5.

- d. Attachments may appear on pieces mailed at First-Class Mail, Periodicals, or USPS Marketing Mail prices only if the applicable content and eligibility standards permit attachments.

2-3.2 **Pressure-sensitive Label**

Any pressure-sensitive label or sticker affixed directly to a mailpiece before mailing must have a minimum peel adhesion to stainless steel of 8 ounces/inch. This standard does not apply to pressure-sensitive labels that the Postal Service provides to mailers to label bundles for sortation levels.

2-3.3 **“Sandwich” Label**

A “sandwich” label is a two-part unit — a face stock (top label) attached to a liner (bottom label) — that is affixed to the mailpiece. The face stock must have a peel adhesion value of at least 2 ounces/inch with respect to the liner label and at least 8 ounces/inch when reapplied to stainless steel.

2-3.4 **Letter-size Piece With Attached Release Card**

A letter-size mailpiece, with one or two attached release cards, must have the following characteristics:

- a. The piece must be between 8" and 9-1/2" long (inclusive). With one release card affixed, the piece must be between 4" and 6" high (inclusive); with two release cards affixed, the piece must be between 5-1/2" and 6" high (inclusive).
- b. No address element, including any address block barcode, may be closer than 1" to the right edge of the mailpiece.
- c. The surface smoothness must be a maximum of 190 Sheffield Units.
- d. Enveloped letters must be made of paper with a minimum 60-pound book-grade paper and have a maximum thickness of 1/8". Window envelopes must have only one closed panel address window, no larger than 1-1/2" x 4-1/4".
- e. Card-type letters, not mailed at card prices, must have a maximum thickness of 0.025" as mailed.
- f. All pieces other than enveloped letters and card-type pieces (such as folded self-mailers and booklets) must have a maximum thickness of 0.1" as mailed. Mailpieces with two affixed release cards must meet the following additional conditions:
 - (1) Pieces requiring tabs must be sealed with 1-1/2" nonperforated tabs, unless larger tabs are required by standards for the specific mailpiece design.
 - (2) Booklets must have a minimum cover weight of 70-pound book-grade paper.
 - (3) Folded self-mailers must have a minimum cover weight of 100-pound book-grade paper.
- g. Content insert shift must be no more than 5/8" horizontally and no more than 1/4" vertically.
- h. Release cards must meet the standards in DMM 201.3.13.5.

2-3.5 **Standards for Release Cards**

One or two release cards, each at least 0.007" thick and no more than 0.012" thick, attached to a letter-size mailpiece must have the following characteristics:

- a. Be rectangular, but with allowance for finished corners having a radius of at least 1/8" up to 1/2".
- b. Be between 3" and 3-1/2" long (inclusive) and between 2" and 2-1/2" high (inclusive). Affix each card with either edge parallel to the length of the mailpiece. If affixing two cards, affix them on the same side of the mailpiece, and stack the cards vertically or side-by-side across the mailpiece length on the non-address side only.
- c. Be affixed by machine to ensure adequate adhesion. The Postal Service does not allow manually affixed attachments.
- d. Be affixed 1" (+/- 1/8") from the bottom of the mailpiece. The card must not interfere with readability of the address, barcode, or postage information. When affixing two cards to a mailpiece, the following additional conditions apply:
 - (1) When affixing the cards on the address side, maintain a space of at least 1/2" from the leading edge, the trailing edge, and the top edge.
 - (2) When affixing the cards to the non-address side, place the right edge of a card between 5" and 6" from the leading edge of the mailpiece, but no closer than 1/2" from the trailing edge. Maintain a space of at least 1/2" from the top edge.
- e. Be affixed to a liner (backing) and have the following adhesion standards:
 - (1) Adhesive used to affix the backing to the mailpiece must have a peel adhesion of at least 2 pounds/inch to stainless steel with a 20-minute dwell time, at 300"/minute at 90 degrees per American Standard Testing Method (ASTM) test D3330F.
 - (2) Adhesive used to attach the release card to the backing must have a peel adhesion of at least 1.5 ounces/inch to stainless steel with a 30-minute conditioning time, at 300"/minute at 90 degrees per ASTM test D3330F.

2-3.6 **Letter-size Pieces With Perforated Pockets**

Perforated pockets are permanent attachments to letter-sized mailpieces that open to reveal a small printed insert.

Perforated pockets may not conceal or contain matter bearing personal information except as provided in DMM 243.2.2. Perforated pockets may appear on letter-size USPS Marketing Mail pieces and Periodicals. They are not considered sealed against Postal Service inspection. When they are affixed to Periodicals mail, advertising printed on the perforated pocket and any inserted matter is counted as part of the total advertising content of the host publication.

Mailers may use pockets in lieu of labels to bear a permit imprint indicia showing that postage is paid if indicia information does not appear on the perforated panel or on the perforations used to create the perforated panel. The Postal Service permits a maximum of two perforated pockets on an eligible letter-size mailpiece that has the following characteristics:

- a. Is between 8" and 9-1/2" long (inclusive).
- b. Is between 4" and 5-1/2" high (inclusive).
- c. Is prepared with a minimum paper basis weight or equivalent as follow:
 - (1) Envelopes: 60-pound.
 - (2) Booklets: 70-pound.
 - (3) Folded self-mailers: 100-pound.

The following requirements also apply:

- a. Oversized card-type letters paid at letter prices must have a thickness of at least .012".
- b. Perforated pockets may be affixed to the non-addressed side of envelopes with one closed panel address window. Perforated pockets must be placed 1" closer to the trailing edge than the window.
- c. If the mailer uses tabs to seal a folded self-mailer prepared with perforated pockets, the folded self-mailer must be sealed with 1-1/2" nonperforated tabs placed 1" from the top on the leading and trailing edges.

2-3.7 **Standards for Perforated Pockets**

A mailer may attach perforated pockets to letter-size mailpieces under the following conditions:

- a. The perimeter of the pocket is affixed with permanent glue with a minimum adhesive strength of 2 pounds/inch to stainless steel with 20-minute dwell time at 300"/minute at 90 degrees per ASTM Test D3330F.
- b. The attached material has a minimum tear strength of 100 grams of force (gf) in both the machine direction and cross direction per Technical Association of the Pulp and Paper Industry (TAPPI) T414.
- c. The cut/tie ratio for perforation is 1:1 with a minimum tie size of 1 millimeter (mm). One double cut may appear at the lower trailing edge corner of the perforated panel of the pocket.
- d. The pocket has the following characteristics:
 - (1) Is between 1-1/2" and 2-3/4" in both length and height.
 - (2) Has an affixed area no more than 0.012" thick and a perforated panel no more than 0.03" thick. Perforated pockets may not exceed the thickness of the host mailpiece. They may not cause the host to have an uneven surface and must not interfere with readability of the address, barcode, or postage information.
- e. The length of each pocket is parallel to the length of the host mailpiece.

- f. The pocket is attached as follows:
 - (1) To the address side of a mailpiece:
 - (a) At least 1" from the bottom and leading edge.
 - (b) At least 1/2" from the top and trailing edge.
 - (2) To the non-addressed side of the mailpiece:
 - (a) At least 1" from the bottom edge.
 - (b) At least 1/2" from the top.
 - (c) At least 5" from the left edge but no closer than 1/2" from the right edge.
- g. Two perforated pockets are attached as follows:
 - (1) Are affixed on the same side of the mailpiece.
 - (2) Are stacked vertically — do not affix the pockets side by side across the mailpiece length.
 - (3) Have a space up to 1/2" between pockets.

3 Nonmachinable Letters

3-1 Criteria for Nonmachinable Letters

A letter-size piece is nonmachinable if it does not meet the automation or machinability standards. Windows in paper envelopes do not make mailpieces nonmachinable.

Attachments do not render mailpieces nonmachinable if allowed by eligibility standards for the class of mail. Additionally, a letter-size piece is nonmachinable if it weighs more than 3.5 ounces.

3-2 Additional Criteria for First-Class Mail Nonmachinable Letters

Letter-size pieces (except cards) that meet one or more of the nonmachinable characteristics are subject to nonmachinable prices. All letter-size pieces weighing more than 3.5 ounces are prepared as letters but charged the flat-sized prices.

3-3 Additional Criteria for USPS Marketing Mail Nonmachinable Letters

Nonmachinable prices apply to USPS Marketing Mail letter-size pieces that have one or more of the nonmachinable characteristics. Mailers must prepare all nonmachinable letters as described in the DMM.

3-4 Additional Criteria for Periodicals Nonmachinable Letters

Outside-County nonbarcoded and In-County nonautomation letter prices apply to Periodicals letter-size pieces that have one or more of the nonmachinable characteristics.

3-5 Priority Mail Express and Priority Mail Letters

The Postal Service encourages mailers (but does not require them) to design and produce Priority Mail Express and Priority Mail letter-size pieces as machinable letters.

3-6 Nonmachinable Criteria

A letter-size piece is nonmachinable if it has one or more of the following characteristics (see DMM 601.1.1.2 to determine the length and height of a mailpiece):

- a. Has an aspect ratio (length divided by height) of less than 1.3 or more than 2.5.
- b. Is polybagged, polywrapped, or enclosed in any plastic material, or has an exterior surface made of a material that is not paper. Windows in envelopes made of paper do not make mailpieces nonmachinable. Attachments allowable under applicable eligibility standards do not make mailpieces nonmachinable.
- c. Has clasps, strings, buttons, or similar closure devices.
- d. Contains items such as pens, pencils, keys, or coins that cause the thickness of the mailpiece to be uneven, or contains loose keys or coins or similar objects not affixed to the contents within the mailpiece. Loose items may cause a letter to be nonmailable when mailed in paper envelopes.
- e. Is too rigid (does not bend easily when subjected to a transport belt tension of 20 pounds around an 11"-diameter turn).
- f. For pieces more than 4-1/4" high or 6" long, has a thickness less than 0.009".
- g. Has a delivery address parallel to the shorter dimension of the mailpiece.
- h. Is a self-mailer that is not prepared according to the DMM.

3-7 Odd-shaped Items in Paper Envelopes

The Postal Service does not permit pens, pencils, key rings, bottle caps, and other similar odd-shaped items in letter-size or flat-size paper envelopes unless they are wrapped within the other contents of the envelope to streamline the shape of the mailpiece and to prevent damage during postal processing. If an odd-shaped item is not properly wrapped, it could burst through the envelope and cause injury to employees and damage to USPS processing equipment. Odd-shaped items that are properly wrapped within paper envelopes and sent at letter prices may be subject to the nonmachinable surcharge for First-Class Mail letters or the nonmachinable prices for USPS Marketing Mail letters.

3-8 Handling, Content, and Extra Service

Mailers may use certain markings to identify handling, content, and extra service. The Postal Service does not permit unauthorized markings not designating price, class, address, handling, content, or extra service. Mailers may not place extraneous information next to or directly under the last line of the delivery address, because such information might be confused with ZIP Codes.

3-9 Window Envelope

For all letter-size mail in window envelopes, every character in the delivery address, including any Intelligent Mail barcode, marking, or endorsement, must be completely visible through the window throughout the full range of movement of the insert bearing the delivery address. Any window envelope used for letter-size or flat-size mail claimed at automation prices, or for letter-size mail claimed at Enhanced Carrier Route High-Density or Saturation letter prices, must meet the barcoding standards for letters. Any window envelope used for letter-size or flat-size mail must meet the following additional standards:

- a. The address and any Intelligent Mail barcode visible through the window must be printed on white paper or paper of a very light color.
- b. A clear space of at least 1/8" is required between the address block, which includes any optional endorsement line, and the top, bottom, and left and right edges of the address window, and must remain when the insert is moved to its full limits in each direction within the envelope to ensure efficient processing and delivery. See DMM 202.5.1 (letters) or 202.5.2 (flats) for barcode clearances when the address block contains a barcode. For nonautomation price mail, the bottom edge of the address window must not extend more than 1/8" into the barcode clear zone as defined in DMM 202.5.3d. Any letter-size envelope containing a window that intrudes into the barcode clear zone is not eligible for NCOA^{Link} mail processing equipment system processing for the MOVE Update standard.
- c. Window cover material, if used over the address window, must be a non-tinted clear or transparent material (e.g., cellophane, polystyrene) and must permit the address, as viewed through the window material, to meet the print contrast ratio (PCR) standards in DMM 204.1.4 to ensure efficient processing and delivery. Glassine may be used for window cover material. All edges of the window cover material must be glued securely to the envelope. The bottom edge of an address window must be at least 1/2" (5/8" preferred) from the bottom edge of the envelope.
- d. For letter-size mail, the delivery address window must be parallel with the longest edge of the envelope. For flat-size mail, the address window may be parallel with any edge of the envelope.

- e. For Registered Mail pieces, the opening on a window envelope must be covered as described in DMM 503.2.3.5.

3-10 Green Diamond Border Envelope

Any envelope or card bearing a green diamond border incurs the appropriate First-Class Mail price, regardless of mail content or of requested class or service. When printed on letter-size mail, the border must not enter the OCR read area or barcode clear zone unless a delivery point barcode or Intelligent Mail barcode appears in the address block.

4 Booklets

4-1 Definition

Booklets must have a bound edge (spine). Sheets that are fastened with at least two staples in the manufacturing fold (saddle stitched), perfect bound, pressed-glued, or joined together by another binding method that produces a spine where pages are attached together are considered booklets. Booklets are open on three sides before sealing, similar in design to a book. In general, booklets must be uniformly thick. Large bound booklets that are folded for mailing may qualify for automation and machinable prices if the final mailpiece remains nearly uniform in thickness and conforms to all other automation standards.

4-2 Paper

Booklet covers generally must be made with a minimum paper basis weight of 60-pounds or equivalent. Minimum basis weights are higher for some designs.

4-3 Physical Standards for Booklets

Booklets must have the following characteristics:

- a. Length: Not more than 10.5" or less than 5". See [Exhibit 4-6.2](#) and [Exhibit 4-7](#) for booklet designs with shorter maximum lengths.
- b. Height: Not more than 6" or less than 3.5".
- c. Thickness: Not more than 0.25" or less than 0.009".
- d. Weight: Not more than 3 ounces.
- e. Aspect ratio: Between 1.3 and 2.5, inclusive.

4-4 General Booklet Design and Sealing

The position of the final fold and intermediate fold (or spine) for letter-sized booklets varies according to the specific design of the mailpiece. Open edges can be sealed with tabs, glue lines, or glue spots. See the exhibits in sections [4-6](#) through [4-9](#) for design and sealing standards by type of design.

Note: When using tabs as seals on the leading edge of small booklets less than 5" high, mailers may place them closer to the top and bottom edges than shown in the exhibits in [4-6](#), [4-8](#), and [4-9](#), and in fact the tabs may overlap in some cases. Also note the exception of the simple spine wallet-style design in [Exhibit 4-7](#), which has a maximum height of 4".

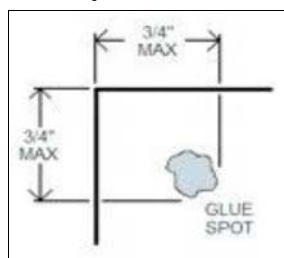
4-5 Tabs, Tape, and Glue

Tabs may be made of paper, translucent paper, vinyl, or plastic. Cellophane tape may serve as a closure when the saw-toothed cut edge is parallel to the edge being sealed. Tabs must not contain perforations. For tab size and placement for folded self-mailers, see DMM 201.3.14. Tab placement is subject to 1/4" variance in either direction. The following standards also apply:

- a. The Postal Service recommends that translucent paper tabs be made with a minimum basis weight of 40-pound book-grade paper.
- b. The Postal Service recommends that opaque paper tabs be made with a minimum basis weight of 60-pound book-grade paper with a tear strength of at least 56 gf in either the machine direction or the cross direction.
- c. When a barcode clear zone is required (see DMM 202.5.1), tabs in the barcode clear zone must have a paper face meeting the standards for background reflectance and, if the mailer does not preprint the barcode, the standards for acceptance of water-based ink.
- d. Vinyl tabs and cellophane tape closures are not acceptable within the barcode clear zone.
- e. Tabs must be tight against the edge of the mailpiece. The Postal Service recommends a maximum overhang of 1/16".
- f. Glue spots may serve in lieu of tabs (as indicated in [Exhibit 4-5f](#)) and must be placed within 3/4" of the open edges.

Exhibit 4-5f

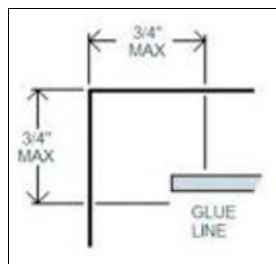
Glue Spot Placement



- g. Continuous glue lines may serve as cover-to-cover seals for specific designs (as indicated in [Exhibit 4-5g](#)). When glue serves as a sealing method, it must be placed along the length of the open edge and end no more than 3/4" from the open ends unless standards require use of a continuous 1/8" wide glue line under [4-5h](#). For folded self-mailers see [2-3.4b](#).

Exhibit 4-5g

Glue Line Placement



- h. Continuous 1/8"-wide glue lines must be placed along the length of the open edge and end within 1/4" of the open ends. The selvage along the open edge must not exceed 1/4". The Postal Service prefers glue lines created with a permanent adhesive that is not tacky when dry.
- i. Die-cut flaps (i.e., those with irregular shapes) must be well sealed to the non-address side panel using tabs, glue spots, or elongated glue lines; however, the Postal Service highly recommends a 1/8" continuous glue line that follows and seals the contour of the shape.

4-6 Simple Spine Booklets

4-6.1 Overview

The spine forms the bottom edge of the mailpiece. The length or method used to seal the booklet determines the weight of the paper forming the cover. See [4-6.2](#) through [4-6.5](#) for various types of simple spine booklets.

4-6.2 Simple Spine Booklets

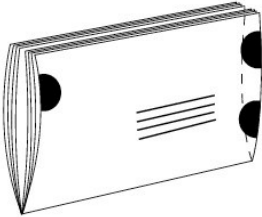
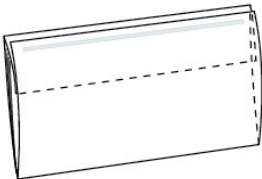
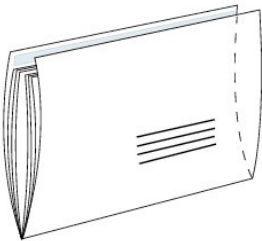
Simple spine booklets have the following characteristics:

- Maximum weight: 3 ounces.
- Maximum length: 9.5" unless noted.
- Maximum height: 6".
- Cover paper weight: 80-pound book-grade paper unless noted. See [Exhibit 2-1.2](#).

See [Exhibit 4-6.2](#) for various types of simple spine booklets and further descriptions.

Exhibit 4-6.2

Simple Spine Booklets

Type	Description
<p data-bbox="537 380 672 405">Basic Cover</p> 	<p data-bbox="920 380 1406 432">5" to 9" long: minimum 50-pound book-grade paper.</p> <p data-bbox="920 443 1406 495">Over 9" up to 10.5" long: minimum 60-pound book-grade paper.</p> <p data-bbox="920 506 1393 558">The front cover may be up to a maximum of 0.25" shorter than pages and rear cover.</p> <p data-bbox="920 569 1187 594">Nonperforated 1.5" tabs.</p> <p data-bbox="920 604 1386 709">Place one tab on the leading and trailing edges within 1" from the top; place one tab on the lower leading edge 0.5" from the bottom.</p>
<p data-bbox="537 724 743 749">Internal Flap Cover</p> 	<p data-bbox="920 724 1341 749">Minimum 80-pound book-grade paper.</p> <p data-bbox="920 760 1406 842">Extended front folded over enclosed pages to create a nonperforated inner flap. Flap sealed inside of back cover.</p> <p data-bbox="920 852 1382 934">Seal with a continuous glue line along flap (preferred) or 1" glue spots as described in 4-5f.</p>
<p data-bbox="537 980 781 1005">Cover-to-Cover Cover</p> 	<p data-bbox="920 980 1341 1005">Minimum 80-pound book-grade paper.</p> <p data-bbox="920 1016 1365 1068">Cover extends no more than 5/8" beyond inner pages.</p> <p data-bbox="920 1079 1382 1194">Seal with a continuous glue line along extended cover as described in 4-5g (preferred) or 1" glue spots as described in 4-5f.</p>

4-6.3 Lightweight Simple Spine Booklets

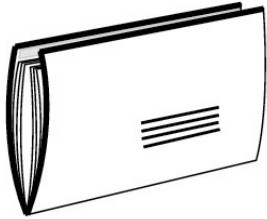
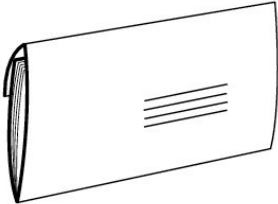
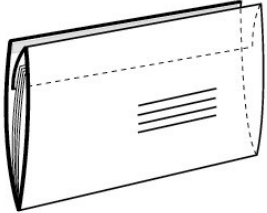
Lightweight simple spine booklets have the following characteristics:

- a. Maximum weight: 0.8 ounce.
- b. Maximum length: 10.5".
- c. Maximum height: 6".
- d. Cover paper weight: 70-pound book-grade paper unless noted. See [Exhibit 2-1.2](#).

See [Exhibit 4-6.3](#) for various types of lightweight simple spine booklets and further descriptions.

Exhibit 4-6.3

Lightweight Simple Spine Booklets

Type	Description
<p>Cover-to-Cover</p> 	<p>Cover extends no more than 5/8" beyond inner pages. Seal with a continuous glue line.</p>
<p>External Flap</p> 	<p>Addressed side of the cover extends over all pages on the back to create a flap. Flap length: At least 1.5" wide when measured down from the top edge. It may be longer, but it cannot be closer than 1" from bottom edge. Flap attaches to the outside of the non-addressed side of the cover. Seal with a continuous glue line.</p>
<p>Internal Flap</p> 	<p>Addressed side of the cover extends over internal pages to create an inside flap. Flap length: At least 1.5" wide when measured down from the top edge. Flap attaches to the inside of the non-addressed side of the cover. Seal with a continuous glue line.</p>

4-6.4 Mid-weight Simple Spine Booklets

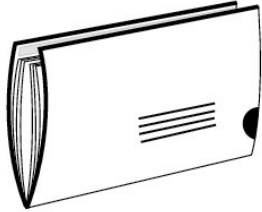
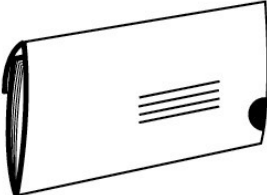
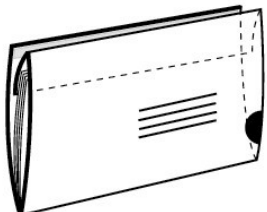
Mid-weight simple spine booklets have the following characteristics:

- a. Weight: Over 0.8 ounce up to 1.6 ounces.
- b. Maximum length: 10.5".
- c. Maximum height: 6".
- d. Cover paper weight: 70-pound book-grade paper unless noted.
See [Exhibit 2-1.2](#).

See [Exhibit 4-6.4](#) for various types of mid-weight simple spine booklets and further descriptions.

Exhibit 4-6.4

Mid-weight Simple Spine Booklets

Type	Description
<p>Cover-to-Cover</p> 	<p>Cover extends no more than 5/8" beyond inner pages.</p> <p>Seal with a continuous glue line and one nonperforated tab 0.5" from the bottom leading edge. Minimum tab size: 1.5".</p>
<p>External Flap</p> 	<p>Addressed side of the cover extends over all pages on the back to create a flap.</p> <p>Flap length: At least 1.5" wide when measured down from the top edge. It may be longer, but it cannot be closer than 1" from bottom edge.</p> <p>Flap attaches to the outside of the non-addressed side of the cover.</p> <p>Seal with a continuous glue line and one nonperforated tab 0.5" from the bottom leading edge. Minimum tab size: 1.5".</p>
<p>Internal Flap</p> 	<p>Addressed side of the cover extends over internal pages to create a flap.</p> <p>Flap length: At least 1.5" wide when measured down from the top edge.</p> <p>Flap attaches to the inside of the non-addressed side of the cover.</p> <p>Seal with a continuous glue as described in 4.5h, and one nonperforated tab 0.5" from the bottom leading edge. Minimum tab size: 1.5".</p>

4-6.5 Heavy-weight Simple Spine Booklets

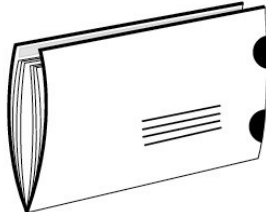
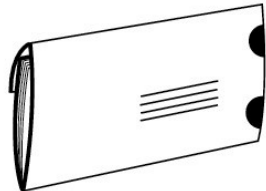
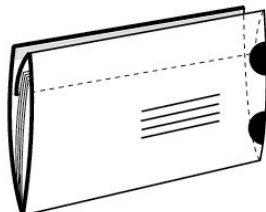
Heavy-weight simple spine booklets have the following characteristics:

- a. Weight: Over 1.6 ounces up to 3 ounces.
- b. Maximum length: 10.5".
- c. Maximum height: 6".
- d. Cover paper weight: 70-pound book-grade paper unless otherwise noted. See [Exhibit 2-1.2](#).

See [Exhibit 4-6.5](#) for various types of heavy-weight simple spine booklets and further descriptions.

Exhibit 4-6.5

Heavy-weight Simple Spine Booklets

Type	Description
<p>Cover-to-Cover</p> 	<p>Cover extends no more than 5/8" beyond inner pages.</p> <p>Seal with a continuous glue line as described in 4.5 and two 1.5" nonperforated tabs. Place one tab on the leading edge 0.5" from bottom; place one tab 1" from top leading edge.</p>
<p>External Flap</p> 	<p>Addressed side of the cover extends over all pages on the back to create a flap.</p> <p>Flap length: At least 1.5" wide when measured down from the top edge. It may be longer, but it cannot be closer than 1" from bottom edge.</p> <p>Flap attaches to the outside of the non-addressed side of the cover.</p> <p>Seal with a continuous glue line and two 1.5" nonperforated tabs. Place one tab on the leading edge 0.5" from bottom; place one tab 1" from top leading edge.</p>
<p>Internal Flap</p> 	<p>Addressed side of the cover extends over internal pages to create a flap.</p> <p>Flap length: At least 1.5" wide when measured down from the top edge.</p> <p>Flap attaches to the inside of the non-addressed side of the cover.</p> <p>Seal with a continuous glue line and two 1.5" nonperforated tabs. Place one tab on the leading edge 0.5" from bottom; place one tab 1" from top leading edge.</p>

4-7 Wallet-style Booklets

On a wallet-style booklet, a spine forms the bottom edge. Wallet style booklets must be sealed with nonperforated tabs. Tab size and placement are dictated by the weight of the booklet.

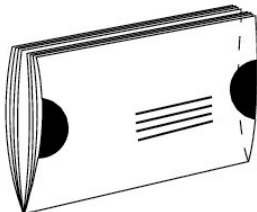
Wallet-style booklets have the following characteristics:

- a. Maximum weight: 2.5 ounces.
- b. Maximum length: 5.2" to 8".
- c. Maximum height: 4".
- d. Cover paper weight: 70-pound book-grade paper, except as noted in [Exhibit 4-7](#). See [Exhibit 2-1.2](#).

See [Exhibit 4-7](#) for a type of wallet-style booklet and a further description.

Exhibit 4-7

Wallet-style Booklet

Type	Description
Cover 	Entire booklet must use 60-pound book-grade paper, or the cover can use 70-pound book-grade paper and the inner pages 50-pound book-grade paper. Tabs: Booklets up to 2 ounces must be sealed with 1.5" nonperforated tabs placed 1-1/4" from bottom leading and trailing edge; booklets over 2 ounces must be sealed with 2" nonperforated tabs placed 3/4" from bottom leading and trailing edge. In either case, the vertical tolerance for tab placement is $\pm 1/8$ ".

4-8 Oblong Booklets

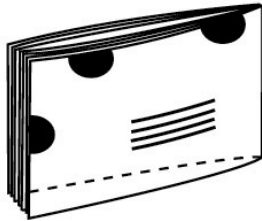
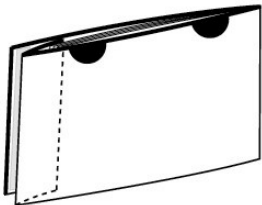
Oblong booklets have a spine on the leading (shorter) edge.

Oblong booklets have the following characteristics:

- a. Maximum weight: 3 ounces.
- b. Maximum length: 10.5".
- c. Maximum height: 6".
- d. Cover paper weight: 70-pound book-grade paper unless otherwise noted. See [Exhibit 2-1.2](#).

See [Exhibit 4-8](#) for various types of oblong booklets and further descriptions.

Exhibit 4-8
Oblong Booklets

Type	Description
<p>All Tab Cover</p> 	<p>5" to 9" long: 60-pound book-grade paper. Over 9" up to 10.5" long: 70-pound book-grade paper.</p> <p>Place two 1.5" nonperforated tabs on the top edge and one tab on the trailing edge. Place the top tabs 1" from left and right edges. Place one 1.5" nonperforated tab in the middle of the trailing edge.</p>
<p>Internal Flap</p> 	<p>5" to 9" long: 60-pound book-grade paper. Over 9" up to 10.5" long: 70-pound book-grade paper.</p> <p>The front or back cover sheet is extended on the trailing edge and folded over the nonrecessed internal pages. The flap is sealed inside the opposite cover sheet with glue. Extended front and back covers with recessed internal pages are not allowed with glue line seals.</p> <p>Seal with a continuous glue line. Place two 1.5" nonperforated tabs on the top edge 1" from the leading and trailing edges.</p>

4-9 Quarter-folded Booklets

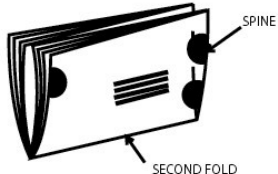
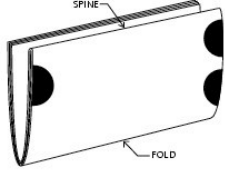
Quarter-folded booklets are mailpieces that are bound and then folded to letter-size. The folded spine may be the leading edge or at the top of the booklet. If necessary, the booklet may have the spine as the trailing edge — however, the Postal Service does not recommend this configuration. The cover must be at least 40-pound book-grade paper. Folded booklets must be sealed with nonperforated 1.5" tabs.

Quarter-folded booklets have the following characteristics:

- a. Maximum weight: 3 ounces.
- b. Maximum length: 10.5" unless noted.
- c. Maximum height: 6".
- d. Cover paper weight: See [Exhibit 4-9](#).

See [Exhibit 4-9](#) for various types of quarter-folded booklets and further descriptions.

Exhibit 4-9
Quarter-folded Booklets

Type	Description
<p data-bbox="537 380 688 405">Vertical Spine</p> 	<p data-bbox="922 380 1406 527">Minimum 40-pound book-grade paper. Place two 1.5" nonperforated tabs on leading edge and one tab on trailing edge. Place upper tabs 1" from the top edge. Place lower leading tab 0.5" from the bottom edge.</p>
<p data-bbox="537 642 716 667">Horizontal Spine</p> 	<p data-bbox="922 642 1406 972">Up to 9" long: 50-pound book-grade paper. Over 9" up to 10.5" long: 60-pound book-grade paper. Tabs: Booklets up to 2 ounces must be sealed with 1.5" nonperforated tabs; booklets over 2 ounces must be sealed with 2" nonperforated tabs. Spine at top on address-side panel. Place one tab on the leading and trailing edge 1" from the top; place one tab on the lower leading edge 0.5" from the bottom.</p>

4-10 Folded Self-mailers

The Postal Service routinely updates folded self-mailer reference material. Mailers can verify the most recent information at pe.usps.com.

5 Letter-size Pieces Containing Discs (CDs or DVDs)

5-1 Basic Standards for Discs in Letter-size Mailpieces

A letter-size mailpiece containing one disc and meeting the general standards in DMM 201.3.0 and the specific standards in DMM 201.3.4.3 is considered automation-compatible. If a mailpiece has one enclosed disc not meeting these standards, the Postal Service must test and approve it for automation-compatibility. For this purpose, a mailer must submit five sample mailpieces and a written request to the local postmaster or business mail entry manager for submission to the Pricing and Classification Service Center (PCSC).

5-2 Disc Size and Placement

Position the disc symmetrically at the vertical centerline and as near to the top edge of the mailpiece as is practical. Secure the disc to prevent it from shifting more than 1/2" in any direction. The maximum characteristics for a disc are as follows:

- a. Diameter: 120 mm (4.7").
- b. Thickness: 2 mm (0.08").

5-3 Dimensions and Shape Standards for Automation-compatible Enveloped Letters Containing Disc

Each enveloped letter must meet the basic standards for machinable letters and have the following characteristics:

- a. Length: Not more than 9.75" or less than 7.25".
- b. Height: Not more than 6" or less than 5.5".
- c. Thickness: Not more than 0.25" or less than 0.009".
- d. Weight: Not more than 3 ounces.

- e. Paper basis weight: Based on the length of the piece, as follows:
 - (1) Up to 8" long: A minimum 70-pound book-grade paper or equivalent.
 - (2) Over 8" and up to 9.75" long: A minimum 80-pound book-grade paper or equivalent.

Note: If the mailpiece is made of the minimum basis weight paper, the disc must be contained in a protective sleeve.
- f. Window envelope: Not allowed unless the Postal Service has tested and approved it.

5-4 Dimensions and Shape Standards for Automation-compatible (Unenveloped) Disc Carriers

Each unenveloped disc carrier must meet the basic standards for a machinable letter in DMM 201.1.0 and have the following characteristics.

- a. Length: Not more than 9.75" or less than 7.25".
- b. Height: Not more than 6" or less than 5.5".
- c. Thickness: Not more than 0.25" or less than 0.009".
- d. Weight: Not more than 3 ounces.
- e. Paper basis weight: Minimum 75-pound book-grade paper or equivalent. The paper stock must meet the industry standard. The stock must be free from groundwood unless it is coated with a substance adding to the stock's ability to resist an applied bending force.
- f. Folds or perforations: Must be parallel to the address.
- g. Tabs: Must meet the requirements for pieces prepared with folds or perforations parallel to the address.

5-5 Unacceptable Characteristics for Automation-compatible Letter-size Pieces with Discs

Discs in letter-sized envelopes and unenveloped disc carriers may not be enclosed in packaging such as plastic "clamshells," plastic "jewel cases," or inflexible cardboard sleeves.

6 Business Reply Mail

6-1 Overview

For an annual permit fee, a Business Reply Mail (BRM) permit is available for distributing business reply cards, envelopes, self-mailers, cartons, and labels. BRM allows the permit holder to receive First-Class Mail and Priority Mail items back from customers by paying postage and fees only on the mail returned. The BRM permit holder guarantees payment of First-Class Mail postage plus a per-piece charge for pieces returned by the Postal Service. (See Notice 123, *Price List*.)

When designing a BRM mailpiece or label, a mailer must consult with the local Post Office. The piece must conform to a specific format to qualify as BRM, including a unique ZIP+4 Code assigned by the Postal Service.

BRM templates are available at <https://pe.usps.com/text/qsg300/Q505.htm#ep1026965>.

The Postal Service also offers an online self-service tool that allows mailers to create approved USPS camera-ready artwork for domestic reply mail pieces in just a few steps. The USPS Automated Business Reply Mail (ABRM) application is a web-based, self-service tool to assist reply mail mailers in creating domestic BRM, Courtesy Reply Mail (CRM), and Qualified Business Reply Mail (QBRM) artwork for card-size and letter-size mailpieces. The ABRM tool allows mailers to design and create approved USPS camera-ready artwork with an Intelligent Mail barcode (IMb). Mailers can then place their IMb either above the address block or in the barcode clear zone (lower-right corner) of the piece and can even add an image or logo related to the mailpiece. Mailers can download artwork files in PDF and EPS formats and can store these files in the system library for future use. Another exciting feature of the ABRM tool allows mailers to authorize third-party vendors or service providers to create artwork on their behalf.

A client must provide its service provider with pertinent information such as its *PostalOne!* BRM permit number, mailer ID, and assigned BRM ZIP+4 Code.

Access the ABRM tool through the Business Customer Gateway Web site at <https://gateway.usps.com/eAdmin/view/knowledge?id=ABRM>.

In addition to the ABRM tool, the Postal Service has implemented the MDA Support Center. This center connects mailers with a mailpiece design analyst (MDA) who will provide timely assistance and evaluations of mailpiece design, including reply mail. The MDA Support Center hours of operation are Monday through Friday between 7:00 am and 5:00 pm CT. Mailers may

contact the MDA Support Center by dialing 855-593-6093, or by sending a request via email to mda@usps.gov.

Before a mailer performs final printing or electronic distribution of reply mail pieces, the Postal Service must approve a proof for regular BRM or QBRM, both of which must include the applicable IMb. The Postal Service does not permit delivery point barcodes on BRM pieces or QBRM pieces.

[Exhibit 6-1a](#) provides layout guidelines for a BRM envelope, and [Exhibit 6-1b](#) provides a BRM checklist. For requirements on reusable envelopes using BRM with two-way indicia, see DMM 601.6.0.

BRM templates are available on the Postal Explorer Web site at pe.usps.com; under the “Business Solutions” tab in the top blue bar, select *Mailpiece Design*.

Exhibit 6-1a Business Reply Mail Layout Guidelines

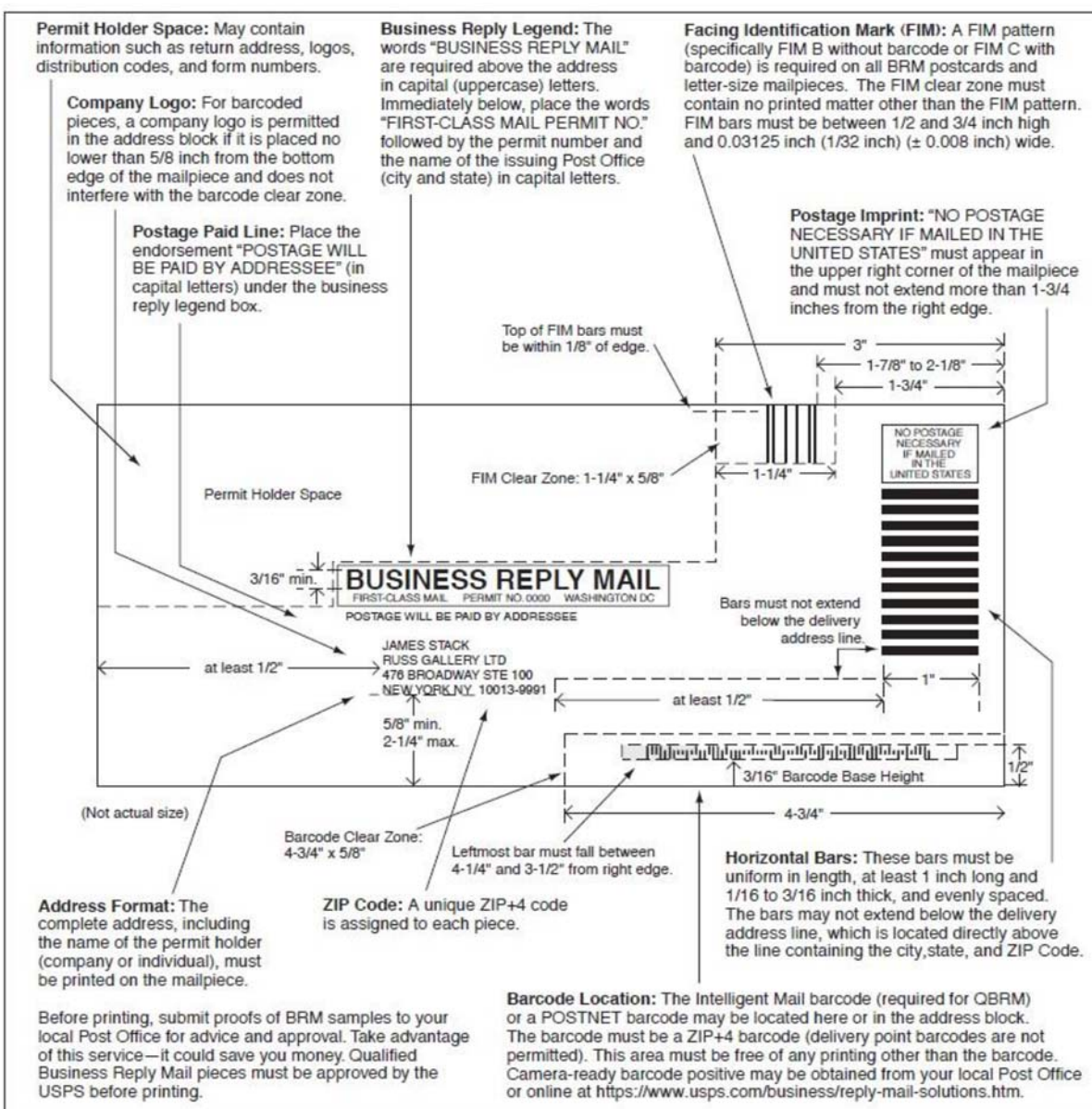


Exhibit 6-1b

Business Reply Mail Checklist**Business Reply Mail Checklist**

This checklist is provided to assist mailers with designing Business Reply Mail.

1. Printing and Print Reflectance

- Not handwritten, typewritten, or handstamped.
- No printed borders on letter-size.
- All ink colors are acceptable if the piece meets the appropriate reflectance standards in DMM 505.

2. "No Postage Necessary" Imprint

- Properly worded (all capital letters recommended):
NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES
- Properly positioned.
- Upper-right corner of the address side of the piece: Not more than 1-3/4" from the right edge of the piece.
- Printed directly on piece¹.

3. Business Reply Legend

- Properly worded:
BUSINESS REPLY MAIL
BUSINESS REPLY LABEL
- All capital letters.
- Letters at least 3/16" high.
- Printed directly on piece¹.

4. Permit Number

- Properly worded:
FIRST-CLASS MAIL PERMIT NO. [NO., CITY, STATE]
(Representing the permit holder's number and Post Office that issued the permit.)
- Directly below the business reply legend.
- All capital letters.
- Printed directly on piece¹.

5. Postage Endorsement

- Properly worded:
POSTAGE WILL BE PAID BY ADDRESSEE
- Directly below First-Class Mail and permit number, city, and state.
- All capital letters.
- Printed directly on piece¹.

6. Delivery Address

- Complete address:
Permit holder's name
Delivery address
City, state and BRM ZIP Code
- Within OCR read area².
- At least 1/2" between ZIP Code and horizontal bars.
- Correct ZIP Code for BRM.
- Permit holder's name printed directly on piece¹.

Business Reply Mail Checklist (continued)

7. Horizontal Bars — Optional with correct Intelligent Mail barcode

- ___ Directly below “No Postage Necessary” imprint.
- ___ Uniform length at least 1".
- ___ 1/16"–3/16" thick and evenly spaced.
- ___ Do not extend lower than 5/8" from bottom edge of piece.

8. Facing Identification Mark (FIM)

- ___ FIM C required.
- ___ FIM clear zone boundaries:
Left: 3" from right edge of the piece.
Right: 1-3/4" from right edge of piece.
Top: top edge of piece.
Bottom: 5/8" from top edge of piece.
- ___ FIM bars 5/8" high, $\pm 1/8$ ".
- ___ FIM bars 1/32" wide, ± 0.008 ".
- ___ Right edge of rightmost bar 2" from right edge of piece, $\pm 1/8$ ".
- ___ Tops of bars no lower than 1/8" from top edge of piece.
- ___ Bottom of bars no lower than 5/8" from top edge of piece, $\pm 1/8$ ".
- ___ Positional skew (slant of the entire FIM) ± 5 degrees.
- ___ Rotational skew (slant of individual FIM bars) ± 5 degrees.
- ___ 30 percent reflectance between FIM and background.

9. Company Logo

- ___ On letter-size, no lower than 5/8" from bottom edge of piece.

10. Intelligent Mail Barcode (IMb) and Delivery Point Barcode^{1,2,3,4,5}

- ___ Barcode clear zone:
Left: 4-3/4" from right edge of piece.
Right: Right edge of piece.
Top: 5/8" from bottom edge of piece.
Bottom: Bottom edge of piece.
- ___ Barcode on mailpiece (barcode read area):
Horizontally, leftmost bar within 3-1/2" to 4-1/4" from right edge of piece.
Vertically, entire barcode within 3/16" to 1/2" from bottom edge of piece.

¹ See DMM 505.1 for window envelopes.

² See DMM 202.2 for OCR read area.

³ See DMM 202.5 for placement of barcode in address block.

⁴ See DMM 204.1 for IMb Specifications.

⁵ See DMM 505.1 for complete QBRM specifications; only IMb can be used on QBRM pieces.

6-2 Dimensions

Postcards that exceed the normal postcard dimensions but meet the letter-size dimensions are mailable, but they incur the regular First-Class Mail letter price. See [Exhibit 6-2](#) for dimensions for postcards.

Barcoded pieces measuring more than 6" long or 4-1/4" high must be at least 0.009" thick.

Additional standards apply to QBRM pieces.

Exhibit 6-2

Dimensions for Postcards

	Letter-size Prices		Card Prices	
	Minimum	Maximum	Minimum	Maximum
Length	5"	11-1/2"	5"	6"
Height	3-1/2"	6-1/8"	3-1/2"	4-1/4"
Thickness	0.007"	0.016"	0.007"	0.016"

6-3 Ink/Paper Colors and Type Styles

Not all colors of paper and/or ink and type styles are compatible with automated equipment. Contact your local Post Office for guidance.

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7 Courtesy Reply Mail

7-1 Overview

Courtesy Reply Mail (CRM) consists of preaddressed postcards or envelopes that the mailer provides to customers, both to expedite their responses and to provide more accurate delivery. It differs from BRM in that no fees are required and the respondent is responsible for applying the correct postage before mailing back the card or envelope.

The mailer prepares CRM with the correct address and barcode to take advantage of automated USPS processing. It is a good choice when you wish to direct replies or payments to an address that is different from your usual mailing address, such as a customer service center or a payment processing location.

The Postal Service provides the mailer, at no charge, the facing identification mark (FIM) and the appropriate barcode that the mailer prints on CRM pieces.

[Exhibit 7-1a](#) provides layout guidelines for a CRM envelope, and [Exhibit 7-1b](#) provides a CRM checklist.

Exhibit 7-1a
Courtesy Reply Mail Layout Guidelines

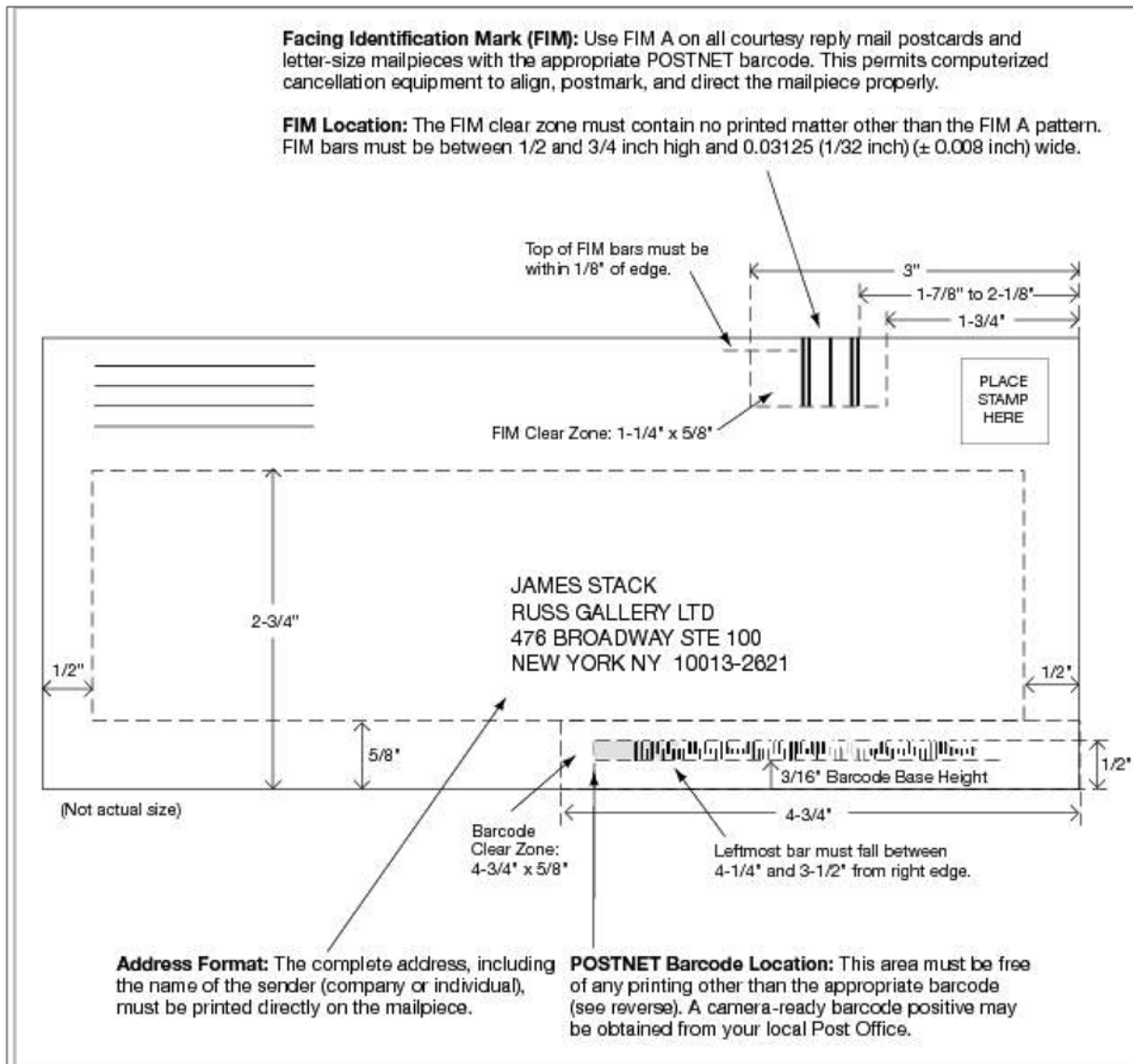


Exhibit 7-1b

Courtesy Reply Mail Checklist**Courtesy Reply Mail Checklist**

This checklist is provided to assist mailers with designing Courtesy Reply Mail.

1. Facing Identification Mark (FIM)

- FIM A is used.
- FIM A is properly positioned. Minimum PRO is met.
- No extraneous printing is in the FIM clear zone.

2. Postage Area: Customer Reminder to Affix Postage (optional element)

- Area extends no more than 1-3/4 inches from the right edge of the mailpiece.

3. Delivery Address Block

- Delivery address line (street address/PO box number) is directly above city/state/ZIP+4 line.
- ZIP Code corresponds with barcode.
- City/state/ZIP+4 line is at least 5/8 inch from bottom and no higher than 2-1/4 inches from bottom edge of mailpiece.
- For window envelopes only: Minimum clearances between address block (including barcode) and window edges are maintained on all sides during "insert shift."

4. Barcode

- Barcode is correctly positioned (in address block or in barcode clear zone).
- Barcode is readable.
- Print reflectance minimum is met.
- If barcoded in the barcode clear zone: There is no extraneous printing or other matter in the zone.

5. Other

- Aspect ratio is met.
- Dimensions are within the letter-size standards.
- Piece is at least 3-1/2 inches high and at least inches long.
- If no longer than 4-1/4 inches by 6 inches, piece is at least 0.007 inches thick, and at least 0.009 inches thick if piece is large than 4-1/4 inches by 6 inches.
- For official mail only: Endorsed "Official Business, Penalty for Private Use \$300" in upper left area.

7-2 Barcodes

Delivery point barcodes or Intelligent Mail barcodes may appear either in the address block or in the lower-right barcode clear zone.

CRM templates are available on the Postal Explorer Web site at pe.usps.com; under the "Business Solutions" tab in the top blue bar, select *Mailpiece Design*.

7-3 Dimensions

Postcards that exceed the normal postcard dimensions but that meet the letter-size dimensions are mailable, but they incur the regular First-Class Mail letter price. See [Exhibit 6-2](#) for dimensions of postcards.

Barcoded pieces measuring more than 6" long or 4.25" high must be at least 0.009" thick.

7-4 Ink/Paper Colors and Type Styles

Not all colors of paper and/or ink and type styles are compatible with automated equipment. Contact your local Post Office for guidance.

8 Meter and PC Postage Reply Mail

8-1 Overview

Under the following conditions, mailers may use indicia generated by any postage evidencing system to prepay reply postage on Priority Mail Express and Priority Mail pieces (when the price is the same for all zones), on First-Class Mail pieces, and on single-piece-price Media Mail and Library Mail pieces:

- a. The postage amount must be sufficient to prepay the full postage due.
- b. Indicia must be printed directly on the mailpiece and must appear in the upper-right corner of the envelope, at least 1/4" from the right edge of the mailpiece and 1/4" from the top edge of the mailpiece.
- c. Indicia must not show the date.
- d. Mailpieces must be pre-addressed for return to the authorized user only.
- e. The words "NO POSTAGE STAMP NECESSARY POSTAGE HAS BEEN PREPAID BY" must be preprinted directly above the address.
- f. Mailers may use FIM A on barcoded letter-size First-Class Mail reply mail except when using PC Postage service.
- g. When using PC Postage, mailers must use FIM D for prepaid reply mail when printing the indicium directly on the mailpiece.
- h. The address side must appear as described in this section and as shown in [Exhibit 8-1a](#) — the mailer may not add anything else.

[Exhibit 8-1a](#) provides layout guidelines for a Meter or PC Postage reply mail envelope, and [Exhibit 8-1b](#) provides a Meter or PC Postage reply mail checklist.

Exhibit 8-1a
Meter or PC Postage Reply Mail Layout Guidelines

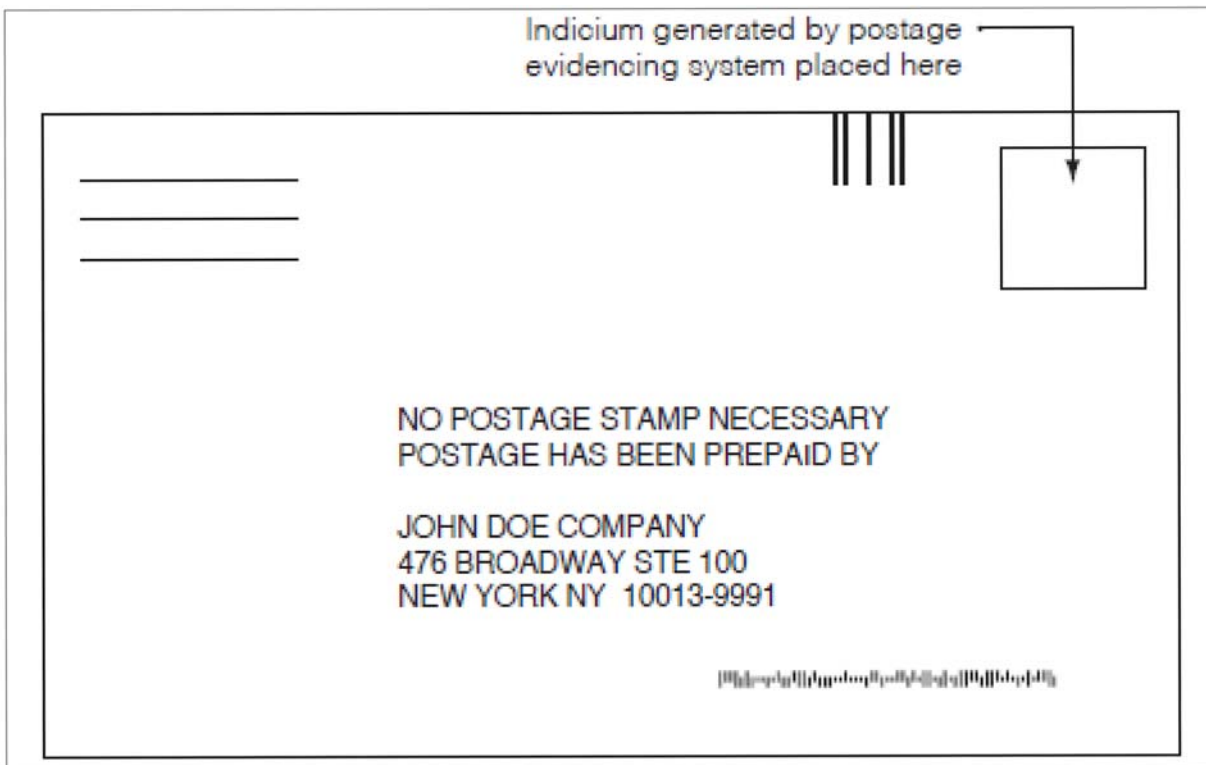


Exhibit 8-1b

Meter or PC Postage Reply Mail Checklist**Meter or PC Postage Reply Mail Checklist**

This checklist is provided to assist mailers with designing Meter or PC Postage Reply Mail.

1. Facing Identification Mark (FIM)

- FIM A is used.
- FIM is properly positioned.
- Minimum Print Reflectance Difference (PRD) is met.
- No extraneous printing is in the FIM clear zone.

2. Meter or PC Postage Stamp

- Stamp is properly positioned.
- Stamp contains no date.
- Stamp is legible.
- Postage is sufficient for type and weight of piece — for example: First-Class and ounce(s), or Priority Mail Flat-Rate and ounce(s) or pound(s).

3. “NO POSTAGE STAMP NECESSARY POSTAGE HAS BEEN PREPAID BY”

- Letters are all capitals.
- Letters are at least 3/16" high.
- Endorsement is properly worded.

4. Delivery Address Block

- Delivery address line (street address/PO Box number) is directly about city/state/ZIP+4 line.
- ZIP+4 Code corresponds with ZIP+4 barcode.
- City/state/ZIP+4 line is at least 5/8" from bottom edge of piece.
- City/state/ZIP+4 line is no higher than 2-1/4" from bottom edge of piece.
- For window envelopes: minimum clearances between address block (including barcode) and window edges are maintained on all sides during “insert shift.”

5. Barcode and Lower-right Barcode Clear Zone

- Barcode is correctly positioned (in address block or barcode clear zone).
- Barcode is readable.
- Print reflectance minimum is met.
- If barcoded in the barcode clear zone: no extraneous printing or other matter is in the zone.

6. Other

- Aspect ratio is met.
- Dimensions are within the letter-size standards and piece is automation compatible.
- Piece is at least 5" long.
- Piece is at least 3-1/2" high.
- If no larger than 6" long by 4-1/4" high, piece is at least 0.007" thick, and at least 0.009" thick if piece is larger than 6" long or 4-1/4" high" or both.
- For official mail: endorsed “Official Business, Penalty for Private Use \$300” in the upper-left area.

8-2 Barcodes

Delivery point barcodes or Intelligent Mail barcodes on letter-size pieces may appear either in the address block or in the lower-right barcode clear zone.

8-3 Dimensions

Postcards that exceed the normal postcard dimensions but that meet the letter-size dimensions are mailable, but they incur the regular First-Class Mail letter price. See [Exhibit 6-2](#) for dimensions of postcards.

Barcoded pieces measuring more than 6" long or 4-1/4" high must be at least 0.009" thick.

Additional standards apply to QBRM pieces.

8-4 Ink/Paper Colors and Type Styles

Not all colors of paper and/or ink and type styles are compatible with automated equipment. Contact your local Post Office for guidance.

9 Permit Reply Mail

9-1 Overview

Permit reply mail (PRM) enables a permit imprint permit holder to receive First-Class Mail and Priority Mail pieces back from customers by prepaying postage for reply mail pieces at the time of mailing. Mailers must distribute PRM pieces only as part of a First-Class Mail mailing using a permit imprint (not through any other means). PRM mailers must apply for authorization through the district manager of Business Mail Entry at the office that holds the permit imprint account, and they must submit preproduction samples of PRM pieces to the Postal Service for approval before distribution.

The following additional conditions apply:

- a. No extra services (e.g., Certified Mail, insurance, Registered Mail) are permitted with PRM.
- b. The PRM customer may not alter the delivery address on a PRM mailpiece to redirect it to any address other than the one preprinted on the piece.
- c. The PRM customer must not use PRM to mail any items except those intended by the permit holder, even when postage is affixed.
- d. A letter-size PRM piece containing one standard disc does not incur a nonmachinable surcharge if the piece meets the standards in DMM 233.2.8. A flat-size PRM piece containing one standard disc and weighing no more than 2 ounces incurs postage applicable for a 1-ounce First-Class Mail letter if the piece meets the standards in DMM 233.2.8.
- e. If the Postal Service discovers a PRM format error, the permit holder or authorized agent receives a written notification of the error. The permit holder must correct the error and ensure that all future PRM pieces meet appropriate specifications before reauthorization. The Postal Service may revoke a PRM authorization because of format errors or misuse.
- f. Each PRM piece must include the format elements shown in [Exhibit 9-1](#).
- g. PRM mailers may print their pieces with any standard industrial printing method (offset lithography, digital printing, etc.) — however, the Postal Service prohibits handwriting, typewriting, or hand-stamping. If you have questions, contact your local Post Office.

- h. The imprint “NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES” must appear in the upper-right corner of the address side of the piece, and it must not extend more than 1-3/4" from the right edge of the piece.
- i. The legend “PERMIT REPLY MAIL” must appear on all pieces. The legend must appear above the address in capital letters at least 3/16" high and may be surrounded by a rule or border.
- j. Directly below the permit reply mail legend, the words “FIRST-CLASS MAIL PERMIT NO. [NO., CITY, STATE]” (representing the permit holder’s number and the Post Office that issued the permit) must appear in capital letters. The permit holder may replace the permit number and the Post Office with a company permit as described in [9-2](#). Directly below that, the endorsement “POSTAGE HAS BEEN PREPAID BY ADDRESSEE” must appear in capital letters. At the permit holder’s discretion, the permit number and postage endorsement may be surrounded by a rule or border.
- k. The complete address (including the permit holder’s name, delivery address, city, state, and ZIP+4) must appear on the piece. PRM pieces must bear a delivery point barcode or an Intelligent Mail barcode.
- l. A FIM C must appear on all letter-size PRM. The FIM C must meet the physical standards in DMM 202.8.0.
- m. A company logo is permitted as follows:
 - (1) On letter-size PRM, if the logo is placed no lower than 5/8" from the bottom edge of the piece.
 - (2) On any piece, if the logo does not interfere with any required format element.

Mailers may distribute PRM as part of the contents of an outgoing mailing only by using a valid permit imprint account. See DMM 604.5.0 for the standards for using permit imprints.

Exhibit 9-1

Permit Reply Mail Format Elements



9-2 Using Company Permit Reply Mail Imprint

A company permit reply mail imprint is one in which the exact name of the company holding the permit appears in the permit reply mail indicia in place of the city, state, and permit number. A customer may use a company permit reply mail imprint if, for 1 year from the date of mailing, the permit holder or its agent keeps records of each mailing paid with a company permit reply mail imprint and makes them available for USPS review on request. These records must include the following information:

- a. The weight of a single piece.
- b. The total number of pieces mailed.
- c. The total postage.
- d. The dates and Post Offices of mailing.

The mailer must include a complete sample mailpiece for each mailing.

To create a company permit reply mail imprint, replace the words “PERMIT NO. [NO., CITY, STATE]” (representing the permit holder’s number and the Post Office that issued the permit) with “PERMIT PAID BY [COMPANY NAME]” (representing the name of the company in the delivery address of the mailpiece) in capital letters.

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10 Facing Identification Mark (FIM)

10-1 Description and Purpose

10-1.1 Overview

A facing identification mark (FIM) is a pattern of vertical bars printed in the upper-right portion of a mailpiece, to the left of the postage area. The FIM tells automated processing equipment some of what it needs to know to do its job. The FIM allows automatic facing (orientation) of letter-size mail for cancellation (postmarking). The FIM also identifies reply mail that bears preprinted barcodes, and the automated processing equipment routes barcoded mail directly to high-speed barcode sorters.

10-1.2 Using FIMs

The FIM serves to orient and separate certain types of First-Class Mail pieces during the facing-canceling process. Mailers must use the appropriate FIM on the following mailpieces:

- a. All letter-size BRM — FIM B and FIM C.
- b. All letter-size PRM — FIM C.
- c. Letter-size CRM and metered reply mail provided as enclosures in automation-price mailings — FIM A.
- d. Letter-size mail with information-based indicia (IBI) printed with nonfluorescent ink directly onto the envelope by an IBI meter or a PC Postage system — FIM D.
- e. Cards and letter-size envelopes containing absentee balloting materials — FIM C.

A mailer may not use a FIM on other types of mail, except on a letter-size envelope with a permit imprint when that envelope is designed for use as a reusable mailpiece. A FIM used for this purpose must be the appropriate FIM for the postage payment method on the returned envelope.

10-1.3 Patterns

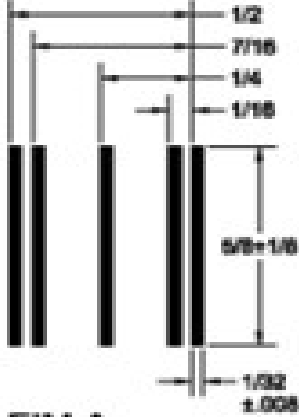
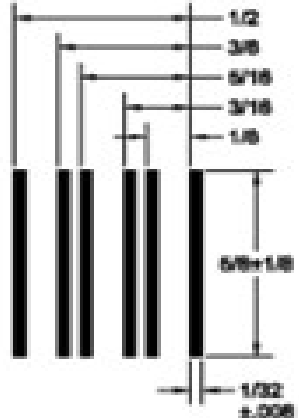
A FIM is essentially a nine-bit code consisting of bars and no-bar placeholders. The presence of a bar can be considered a binary “1” (one), and the absence of a bar can be considered a binary “0” (zero). The required

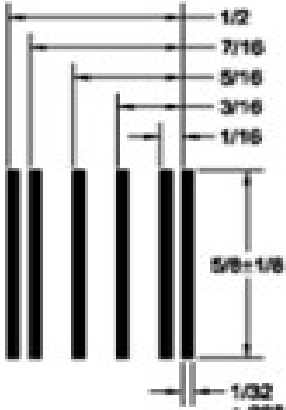
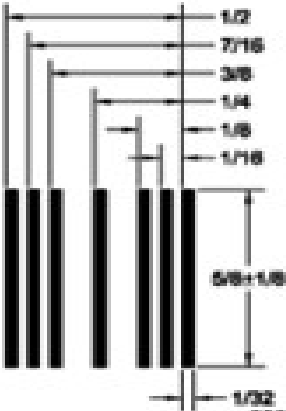
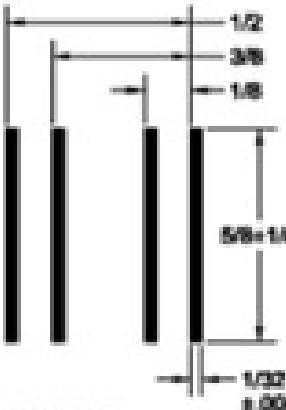
FIM pattern depends on the type of mail and the presence of a delivery point barcode or an Intelligent Mail barcode, as follows:

- a. FIM A is for CRM with a preprinted barcode and metered reply mail with a preprinted barcode. (The binary code for FIM A is 110010011.)
- b. FIM B is for BRM without a preprinted BRM ZIP+4 barcode. (The binary code for FIM B is 101101101.)
- c. FIM C is for BRM with a preprinted BRM ZIP+4 barcode and for PRM with a preprinted delivery point barcode. (The binary code for FIM C is 110101011.)
- d. FIM D is for letter-size First-Class Mail pieces with PC Postage or IBI printed with nonfluorescent ink directly on the envelope. (The binary code for FIM D is 111010111.)
- e. FIM E is for postcard-size and letter-size First-Class Mail with customized services. (The binary code for FIM E is 101000101.)

See [Exhibit 10-1](#) for FIM patterns.

Exhibit 10-1
FIM Patterns (not drawn to scale)

Pattern	Use	Barcoded?
 <p>FIM A</p>	<p>Courtesy Reply Mail Metered Reply Mail</p>	<p>Yes</p>
 <p>FIM B</p>	<p>Business Reply Mail without a preprinted barcode</p>	<p>No</p>

Pattern	Use	Barcoded?
 <p>FIM C</p>	<p>Business Reply Mail with a preprinted barcode</p>	<p>Yes</p>
 <p>FIM D</p>	<p>IBI Meters PC Postage Systems</p>	<p>Not required (the meters contain the same information contained is a barcode)</p>
 <p>FIM E</p>	<p>Customized Services</p>	<p>Yes — but IMb only</p>

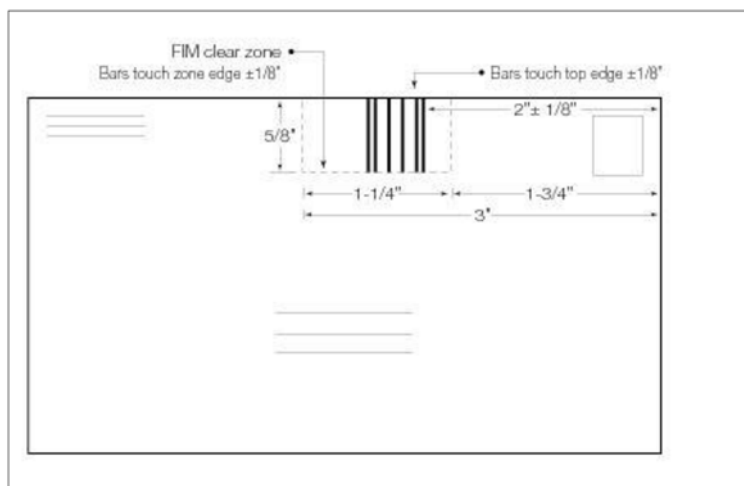
10-2 FIM Standards

Ensure that the FIM bars and FIM clear zone meet the following standards:

- The FIM clear zone must contain no printing other than the FIM pattern. [Exhibit 10-2](#) shows the configuration of the clear zone and the correct location of the FIM.
- The FIM bars must be $5/8$ " high ($\pm 1/8$ ") and $1/32$ " wide (± 0.008 ").
- The right edge of the rightmost bar of the FIM must be 2 " from the right edge of the mailpiece ($\pm 1/8$ ").
- The tops of the FIM bars must be no lower than $1/8$ " from the top edge of the mailpiece. The tops of the bars may extend over the top edge of the piece to the back (flap) of the piece *as long as* at least a $1/2$ " bar height is maintained on the address side.
- The bottoms of the FIM bars need not touch the bottom edge of the FIM clear zone, but they must not be more than $1/8$ " above or below that edge.

Exhibit 10-2

FIM Layout Guidelines (not drawn to scale)



10-3 Print Reflectance Difference

The Postal Service requires a print reflectance difference (PRD) of at least 30 percent in the red and green portions of the optical spectrum between the background material of the mailpiece and the barcode, when measured with a USPS or USPS-licensed envelope reflectance meter. (PRD equals the reflectance of the background minus the reflectance of the ink.) Black ink on a white background usually satisfies this requirement, and the Postal Service recommends it.

FIM bars must be printed within the dimensions shown in [Exhibit 10-2](#). The bars must be within 5 degrees of perpendicular to the top edge of the mailpiece.

10-4 FIM Positives and Barcodes

The Postal Service provides, at no charge, camera-ready positives of the FIM that you need to use and a camera-ready print of the barcode representing the correct ZIP+4 Code and barcode or delivery point barcode as appropriate for your reply mail address. Do not reduce or enlarge these positives and prints. Visit *pe.usps.com* to find your local mailpiece design analyst or to design camera-ready positive yourself.

10-5 Obtaining FIMs, Barcodes, and ZIP Codes

You can get FIM positives from your postmaster or mailpiece design analyst. FIMs are also available on Postal Explorer at *pe.usps.com*; under “Business Solutions” in the top bar, click on *Mailpiece Design*.

You can find the templates for your reply mail envelopes on Postal Explorer, as well as options for obtaining FIMs and barcodes, obtaining permit numbers, and payment options; under “Business Solutions” in the top bar, click on *Mailpiece Design*.

10-6 Importance of Correct Barcodes and FIMs

Even though barcodes representing different delivery points can look nearly identical, the correct barcode is essential. The barcode used for your regular mail delivery is different than the barcode used for your BRM.

Printing the wrong barcode on a reply mail piece can direct your mail to the wrong Post Office. A wrong barcode may delay delivery of your mail.

It is easy to confuse different FIM patterns. Before you format and print reply mail, be sure that the barcode and FIM are correct for that use.

It is important that the barcode and FIM are positioned properly on reply mail pieces. If part of the barcode lies outside the read area, the barcode might not be scanned accurately.

For correct positioning, use Notice 67, *Automation Template*, which is available from the Material Distribution Center at 800-273-1509.

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11 Ink/Paper Information

11-1 Overview

To ensure the machinability of letter-size mail, the quality of the printing is as important as the placement of the delivery address.

11-2 Ink/Paper Colors and Type Styles

Not all colors of paper and/or ink and type styles are compatible with automated equipment.

Inverse (or reverse) printing — i.e., light print on a dark background — is not permitted for automation and machinable mail, including BRM and QBRM pieces. Paper color is relative to the printing color of the address, barcode, return address, and postage indicia. It is very important in the barcode clear zone. The Postal Service recommends that the paper color allow the PRD (contrast) to conform to the requirements listed in the discussion on reflectance — see [11-4](#).

Regarding type styles and the best readability on USPS machines, the Postal Service recommends proportional or fixed fonts, or as close to proportional or fixed fonts as possible (e.g., Arial, Tahoma). Avoid script or styles similar to Gothic because USPS machines cannot read them well.

11-3 Paper Quality

The Postal Service recommends that the paper or other material used for the envelope or outermost sheet of the address side of a mailpiece allow the water-based ink applied by USPS equipment to dry within 1 second without smearing.

11-4 Reflectance

11-4.1 **Overview**

Reflectance is the measurement of the light that rebounds from a surface. It is extremely important that the reflectance of the printed address or barcode on a mailpiece contrast sufficiently with the background. The contrast helps

to ensure that USPS processing machines can read the address information and direct your mail correctly.

This section provides definitions and formulas for determining the reflectance of mailpiece backgrounds and printing ink, print contrast ratio (PCR), and print reflectance difference (PRD). Values for these parameters are always less than one. Decimals and percentages can express the same amount — for example, 0.65 means the same as 65 percent — and it is easy to convert between decimals and percentages. Use the tables in [Exhibit 11-4.1a](#) and [Exhibit 11-4.1b](#) as tools to convert between decimals and fractions (USPS standards may appear in either format).

Exhibit 11-4.1a

Decimal and Fractional Equivalents — Fractions Divisible by 32, 16, 8, and 4

Decimals	Fractions			
	#/32	#/16	#/8	#/4
0.0313	1/32			
0.0625	2/32	1/16		
0.0938	3/32			
0.1250	4/32	2/16	1/8	
0.1563	5/32			
0.1875	6/32	3/16		
0.2188	7/32			
0.2500	8/32	4/16	2/8	1/4
0.2813	9/32			
0.3125	10/32	5/16		
0.3438	11/32			
0.3750	12/32	6/16	3/8	
0.4063	13/32			
0.4375	14/32	7/16		
0.4688	15/32			
0.5000	16/32	8/16	4/8	2/4
0.5313	17/32			
0.5625	18/32	9/16		
0.5938	19/32			
0.6250	20/32	10/16	5/8	
0.6563	21/32			
0.6875	22/32	11/16		
0.7188	23/32			
0.7500	24/32	12/16	6/8	3/4
0.7813	25/32			
0.8125	26/32	13/16		
0.8438	27/32			
0.8750	28/32	14/16	7/8	
0.9063	29/32			
0.9375	30/32	15/16		
0.9688	31/32			

Exhibit 11-4.1b

Decimal and Fractional Equivalents – Fractions Divisible by 25 and 5

Decimals	Fractions	
	#/25	#/5
0.0400	1/25	
0.0800	2/25	
0.1200	3/25	
0.1600	4/25	
0.2000	5/25	1/5
0.2400	6/25	
0.2800	7/25	
0.3200	8/25	
0.3600	9/25	
0.4000	10/25	2/5
0.4400	11/25	
0.4800	12/25	
0.5200	13/25	
0.5600	14/25	
0.6000	15/25	3/5
0.6400	16/25	
0.6800	17/25	
0.7200	18/25	
0.7600	19/25	
0.8000	20/25	4/5
0.8400	21/25	
0.8800	22/25	
0.9200	23/25	
0.9600	24/25	

The symbol “R” indicates reflectance. Only diffuse (scattered) reflectance is of interest. It represents the percentage of incident light diffusely reflected by a material. A surface perfectly reflecting the incident light has a reflectance of 100 percent, and a surface reflecting only half the incident light has a reflectance of 50 percent.

See [11-4.2](#) and [11-4.3](#) for information regarding PRD and PRC. Note that mailpiece design analysts can measure PRD and PCR, as well as other mailpiece characteristics, using the Postal Service Envelope Reflectance Meter (ERM III).

11-4.2 **Print Reflectance Difference**

The Postal Service requires reply mail pieces to have a PRD of at least 30 percent. The equation for PRD is as follows:

$$\text{PRD} = (\text{RW} - \text{RP}) \times 100.$$

Note: “RW” is the reflectance of the background (e.g., the envelope or card), and “RP” is the reflectance of the ink (e.g., character stroke).

11-4.3 **Print Contrast Ratio**

The Postal Service requires reply mail pieces to have a PCR no greater than 15 percent. The equation for PCR is as follows:

$$\text{PCR} = (\text{RW} - \text{RP}) \div \text{RW} \times 100.$$

Note: “RW” is the reflectance of the background (e.g., the envelope or card), and “RP” is the reflectance of the ink (e.g., character stroke).

11-5 Address Block Measurements

ERM III is a portable desktop scanning device that interfaces to a laptop or desktop personal computer. It is capable of viewing the barcode and address block of letter-size and flat-size mailpieces.

The ERM III measures optical properties read by USPS automation equipment. It examines finished mailpieces bearing address information as well as the pre-production materials intended for subsequent use in mailpiece construction. Primarily, the ERM III measures the following:

- a. Envelope reflectance.
- b. Barcode quality analysis of intelligent mail barcodes or delivery point barcodes.
- c. Opacity.

The meter determines whether there is sufficient contrast between the printed character/barcode and the envelope background so that USPS automation equipment can successfully process the mailpiece.

11-6 Intelligent Mail Barcodes, Delivery Point Barcodes, and FIM Measurements

The Postal Service recommends that mailers use the ERM III to measure print reflectance and print reflectance difference on delivery point barcodes and Intelligent Mail barcodes, and on FIM bars to avoid interference with readability. The same procedures that apply to measuring address blocks apply to measuring barcodes and FIMs. The Intelligent Mail barcode specification USPS-B-3200 is available at <https://postalpro.usps.com/node/2190>.

12 Barcoding Software and Equipment

12-1 CASS and MASS

The Postal Service has designed the Coding Accuracy Support System (CASS) certification process in cooperation with the mailing industry to improve the quality of postal codes — i.e., 5-digit ZIP, ZIP+4, delivery point, and carrier route codes that appear on mailpieces.

The CASS software certification program provides hardware and software developers, service bureaus, and commercial mailers a common measure by which to test the quality of address-matching software. The U.S. Postal Service National Customer Support Center (NCSC) grades software tests for CASS certification, and it returns the results to the developer to provide useful diagnostics for correcting software deficiencies. However, CASS processing does not measure the accuracy of postal codes in a mailer's address file.

CASS certification is valid until the end of the current period. For software to remain CASS Certified for each period, developers must reapply for certification and meet the minimum accuracy requirements during Stage II testing.

Another certification program offered by the CASS Department is the Multiline Accuracy Support System (MASS). MASS provides certification for multiline optical character readers (MLOCRs), remote video encoding (RVE) systems, local video encoding (LVE) systems, and encoding stations to process address information and apply an accurate delivery point barcode.

The NCSC issues MASS certification once the mailer achieves the required level of accuracy. MASS certification is a biennial requirement and is valid from the certification date until the end of any current biennial period. The Postal Service requires MASS certification for all mailers using MLOCRs, RVE systems, LVE or encoding stations when printing delivery point barcodes on mailpieces submitted for mailing at automation prices.

12-2 PAVE

The Postal Service has designed the Presort Accuracy, Validation, and Evaluation (PAVE) program in cooperation with the mailing industry to evaluate presort software and determine its accuracy in sorting address files according to DMM standards. PAVE is available only to presort software developers and vendors (i.e., companies that develop presort software or perform retail services for those developers). Participation in the PAVE program is voluntary.