Mailmark Large Letters – Specification Requirements

The document sets out physical design, Indicium, addressing, barcoding and other Royal Mail Mailmark specifications that are required when posting Large Letters using Mailmark.

The document is designed to ensure that Royal Mail Large Letter processing machines can process and read Large Letters effectively at high speed, without the need for manual or other intervention. Each specification requirement set out in this Appendix M has been assessed and is categorised as either 'Mandatory' (M), or 'Recommended High Risk' (H) or 'Recommended Low Risk (L)':

- Large Letters that fail to meet the 'Mandatory' requirements are regarded as unmachineable and are very likely to have Surcharges applied.
- Large Letters which fail to meet the requirements that are identified as 'Recommended - High Risk' have a higher likelihood of performing poorly through our processing machines. Large Letters that fail to meet these requirements are more likely to have Surcharges applied and may become damaged in our processing machines.
- Large Letters which fail to meet the requirements that are identified as 'Recommended - Low Risk', may perform poorly through our processing machines. However, the risk is lower than that posed by failure to meet the 'Recommended High Risk' specifications and there is less chance of Large Letters being damaged or Surcharges being applied.

We have provided guidance footnotes that explain the risks associated with not meeting the 'Recommended' requirements.

At the bottom of the document we have also provided all of the Figures which are referenced throughout the document and which provide illustrative examples of the specification requirements.

1. Physical Specification Requirements Applicable to ALL Large Letters

1.1 These requirements apply to all Large Letters unless stated otherwise.

Category		Specification Requirement	M/R
Size, Shape & Design	**Shape**	Rectangular or square with straight sides and 90° corners	M
	Orientation	Landscape or portrait	M
	Size (H x L x D)	Rectangular Minimum – 95mm x 145mm, Maximum – 245mm x 345mm Square Minimum – 145mm x 145mm, Maximum – 245mm x 245mm	M
	Thickness	Minimum – 0.5mm, Maximum – 10mm	M
	Weight	Minimum – 10g, Maximum – 750g	M
	Content / Inserts	• Inserts other than paper that are placed in an envelope must be fixed in position and attached to the largest paper insert. The inserts may include small metal objects such as keys, coins, and badges. • The spines on magazine inserts should be located on the reference edge [1].	M L [2]
	Spatial Distortion & Lateral Movement	• Where there are step changes (i.e. multiple inserts) in the thickness of the Large Letter, at least 50% of the overall thickness of the Large Letter must be uniform.	M
		• The lateral movement of the largest paper insert should be no more than 30mm (see Figure 35).	H [3]
	Flexibility	The acceptable rigidity or stiffness for a Large Letter must be at least 8N.mm. This is determined using the test below (see Figure 36):	M

[1] The reference edge is the edge beneath the address for landscape rectangular and square Large Letters and the long edge to the left of the address for portrait Large Letters. The reference edge enables the letter to be processed through the machines efficiently.
[2] This enables effective presentation to the machine and subsequent processing.
[3] Where the Letter Large thickness is variable and lateral movement is high, there is an increased risk of the Large Letter content being separated from the envelope or wrap.

Category		Specification Requirement	M/R
		○ A single Large Letter is placed on a flat surface with the shortest edge of the Large Letter overhanging a straight edge of a flat surface by a horizontal distance of 100mm. ○ The leading edge of the Large Letter is then released and allowed to bend down under its own weight. If the leading edge drops to 40mm or more, then the stiffness is less than 8N.mm and the Large Letter is unmachineable.	
Design	Separation	• Large Letters must be capable of separating by sliding one from another under the force of gravity, when placed on a slope of 65 degrees to the horizontal (see Figure 39).	M
	Do Not Redirect	Not permitted for Large Letters	
	Logos & Advertising	• Any logo or advertising slogan printed on the Large Letter should not look like an address or include a geographical location, country or a Royal Mail bag or bundle label. • Slogans where the company name contains the words 'Return', 'Address' and 'Undelivered' should be avoided.	L [4] L Error! Bookmark not defined.

2. Network Access Indicium and Customer Access Indicator

2.1 Envelope, polymer, unwrapped - Indicia and Customer Access Indicator

Indicia requirements are the same as those for Letters with the Access PPI, Stamp-Like Indicia and Digital Indicia being available.

2.2 Paper Wrap - Indicia and Customer Access Indicator

Indicia requirements are the same as those for other Large Letters with the Access PPI, Stamp-Like Indicia and Digital Indicia being available with the exception of the location.

Category		Specification Requirement	M/R
	Location	The Indicium must be located on the front of the Letter, above and to the right of the Delivery Address and in the top right corner of the Letter in the Indicium area.	M

3. Addressing

Addressing requirements are the same as those for Letters, except for the Delivery Address and return address locations as detailed below.

Category		Specification Requirement	M/R
Delivery Address Location	General	The Delivery Address[5] must not be printed in the border area (see Figure 43 and Figure 44): • Landscape - 15mm to the top, left, right, and the bottom. • Portrait - 15mm to the top, left, right, and the bottom.	 M M
	Delivery Address Location[6]	• The Delivery Address must be positioned below and to the right of the Return Address. • The Delivery Address must be positioned below and to the left of the Indicia. • The Delivery Address block and the Mailmark code must not be printed over or beneath the long flap/seal.	M M M
	Delivery Address Location –	• The Delivery Address block may be printed on the Polymer or may show through a 'Window' in the Polymer on an insert.	M
		• The Delivery Address block and the Mailmark code must not be printed over or beneath the longitudinal seal.	M

[4] To reduce any potential for address reading errors,
[5] This is specifically the delivery address. The addressee and any MDI content may encroach into the 15mm top clear zone.
[6] The Large Letter requirements enable the Indicia, Delivery Address and Return Address to be printed within a 50mm high band.

Category		Specification Requirement	M/R
	Polymer Wrap (See Figure 40)	• Where there is lateral movement of the insert within a Polymer Large Letter and the address is printed on the film, the Delivery Address block must not encroach into a border of 15mm from any edge. In addition, the amount of lateral movement is also required around the perimeter of the envelope where specific clear zones are not defined. i.e. Along the Bottom, Left, and Right edges. e.g. Where the Lateral Movement is 10mm, the required border is 15mm + 10mm = 25mm.	M
Return Address Location		The return address location is determined by the dimensions of the Large Letter: Large Letters up to 162mm x 229mm The return address must be located on the back of the Large Letter and centred within the top 40mm. Large Letters over 162mm x 229mm The return address must be located either: • on the back of the Large Letter and centred within the top 40mm. This is the preferred location as it avoids any confusion with the Delivery Address block (see Figure 13 of the Mailmark Letter specification), or • on the front of the Large Letter in the top left corner (with no element closer than 75mm to the right edge, and no closer than 12mm to the Delivery Address (see Figure 14 of the Mailmark Letter specification).	M M

4. Paper Envelopes

Category		Specification Requirement	M/R
Paper Envelope Construction & Design	Material	• Envelopes must be made from **paper only** and have NO open apertures.	M
		• Perforations (including Zip Tie perforations) must not be used on Large Letters.	M
	Flaps	The opening flap may fold to either the back or the front of the Large Letter.	L [7]
	Sealing	• Adhesives used must be dry, and must not leak onto the open surface of the Large Letter.	M
		• Large Letters must not be stuck or caught together.	M
		• Envelopes must be securely sealed on the front, back, and all edges.	H [8]
		• The flap should be sealed to within a minimum of 35mm from the fold of the envelope flap, and 25mm from the envelope sides (see Figure 37).	L [9]
	Paper Weight	Minimum 70gsm for envelopes and minimum 200gsm for postcards	H [10]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H [11]
	Absorbency	The paper used should have an absorbency of 15–35 gsm of water in 1 minute (BS EN 20535 - Paper and board. Determination of water absorptiveness).	H [12]
	Porosity	The paper used should have a porosity value of less than 700 ml per minute (BS 6538-2 - Air permeance of paper and board).	L [13]
Window.	Fixing	• Envelopes with apertures must have a window film covering the aperture, and the film must be securely sealed to the inside of the envelope on all sides of the aperture.	M
		• The Delivery Address block should be visible through the window.	H Error! Bookmark not defined.

[7] There is no preference here.
[8] This ensures that the seals are strong enough to remain intact during the rigours of mechanical and manual handling.
[9] This may result in the unsealed portion of the flap being torn during processing
[10] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling.
[11] This facilitates Mailmark, address, and Indicia reading.
[12] This facilitates the application of codes and artwork to the Large Letter (i.e. the ink soaks in and does not rub off).
[13] This facilitates the single item sorting when mail is placed on the machine (i.e. fewer double fed Letters and missorts).

Category		Specification Requirement	M/R
		• The window film should be flat and fixed evenly across the surface area it is in contact with. • The window film should be robust enough not to become creased, crumpled or otherwise deformed.	H [14] H Error! Bookmark not defined.
	Number	There should be no more than 1 window on the front of the Large Letter.	L [15]
	Size	The window must take up no more than 25% of the surface area.	M
	Shape	Windows should be rectangular (with rounded corners).	L [10]
	Position	Windows must be located at least 40mm from the top edge and at least 15mm from the left, right and bottom edges (see Figure 43 and Figure 44).	M
	Gloss	The maximum gloss value for the window should not exceed 150 when measured at 60°, in accordance with American Standard Test Method (ASTM) 2457.	H Error! Bookmark not defined.
	Haze	The maximum haze value for the window should not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).	H Error! Bookmark not defined.

5. Polymer Wrap

Category		Specification Requirement	M/R
Polymer Wrap Construction & Design	Material	• Polymer Large Letters must be made from a polymer film. e.g. polyethylene. • The film must be intact, undamaged and must not be punctured, split or torn [16]. • The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals. • The single layer film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter. • Where the Delivery Address is to be read through the film, the gloss value should not exceed 150 (American standards of testing and materials (ASTM) 2457 Measured at 60°). • Where the Delivery Address is to be read through the film, the haze value should not exceed 75 % (ASTM D1003-00 Procedure A (Hazemeter)).	M M M M H Error! Bookmark not defined. H Error! Bookmark not defined.
	Design	Any text, barcode, or graphics that are printed on the wrap should adhere to the film and should not break up or wear during processing.	M
	Sealing	• The wrap must be securely sealed. The requirements for the Longitudinal Seal are as follows (see Figure 40). o The seal for the Polymer wrap must run along the length of the Large Letter. o The seal must be secured along the whole length of the seal and at each end. o The free edge of the seal must be less than 30mm deep.	M M M H [17]

[14] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling, and facilitates Mailmark and address reading.
[15] This facilitates Mailmark and address reading.
[16] The only exception being polymers that are perforated for child safety purposes.

Category		Specification Requirement	M/R
		○ When located on the front of the Large Letter, the seal must not be over the Delivery Address Block or the Mailmark Code.	M
		○ The preferred location for the seal is on the back of the Large Letter.	L [17]

6. Polymer Envelope

Category		Specification Requirement	M/R
Construction	Material	• Polymer Large Letters must be made from a polymer film. e.g. polyethylene.	M
		• The film must be intact, undamaged and must not be punctured, split or torn [16].	H [17]
		• The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals.	M
		• The film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter.	M
Poly Env. Construction	Sealing	• The polymer envelope must be fully sealed.	M
		• Any glue sealed edges other than the opening flap must be sealed to the edge of the Large Letter.	M
		• The glue must not run out onto the outside of the mail item, or produce protruding mounds on the Large Letter.	M
		• The glue must be fully cured prior to presentation of the mailing to Royal Mail.	M
		• The glue must be stronger than the polymer.	M
		• The opening flap should be sealed to within 25mm of the envelope at the top and sides (see Figure 38).	H [10]

7. Unwrapped (Open) Mail

Category		Specification Requirement	M/R
Design	General	Standard physical requirements for paper Large Letters apply (see section 3.1.1), with the addition of the following specific requirements.	M
	Specific Requirement	• The spine must always be on a long edge.	M
		• The spine must be glued or stapled. (Punch and bind bindings are not permitted).	M
		• All pages must be secured to the binding. Loose inserts are not permitted.	M
		• Onserts must not be attached to the mail. e.g. pens or product samples.	M
		• The cover of the mail must each have a paper weight of at least 50 gsm.	M
		• The pages of the booklet must have a paper weight of at least 50 gsm.	M
		• All pages (including the cover) must be of equal size.	M

8. Paper Wrap Mailers

For the purposes of this section a Paper Wrap Mailer is defined as: *'A rectangular or square shaped mailpiece made from rectangular or square paper that is folded and sealed. It may be designed to be opened or to enclose an insert. Its unfolded edges are sealed using either inner glue spots or a continuous glue line.'*

8.1 Paper Wrap - Physical

These physical requirements apply to Paper Wrap Mailers in addition to the generic Large Letter requirements.

Category		Specification Requirement	M/R
P	Material	• Envelopes must be made from **paper only** and have NO open apertures.	M

[17] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.

Category		Specification Requirement	M/R
		• The Wrap must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals.	M
	Paper Weight	Minimum 90 gsm	H [18]
	Folds & Edges	• The long edges of the finished mailpiece must be folds,	M
		• The short edges may be folded or sealed, and flap must be sealed.	M
	Reference Edge	• The reference edge must be a folded edge on the mailpiece.	M
		• For landscape the folded reference edge is the edge beneath the address.	M
		• For portrait items the reference edge is the longest left edge.	M
		• For square mailers, the reference edge is the edge beneath the address.	M
	Flap / Long Seal	• If the flap/long seal is located on the front of the Large Letter, the Delivery Address Block and the Mailmark Code must not be positioned over the flap/long seal.	M
		• The flap/long seal should run parallel to the reference edge and open from the bottom.	H [10]
		• The free edge of the flap/long seal should be less than 30mm deep.	H [10]
		• The preferred location for the flap/long seal is on the back of the Large Letter.	L [19]
		• The maximum height for a flap/long seal depends on the mailpiece size but should be least 40mm from the bottom of the mailpiece.	L [19]
	Sealing	• The wrap must be securely sealed on the flap/long seal and front, back, and all edges.	M
		• The flap/long seal must be glued with a continuous seal.	M
		• The Flap / long seal must be a minimum 2.5mm wide sealed to within 3mm–5mm of the edge.	M
		• The side seals must be a minimum 4mm wide and to the edge.	M
		• Adhesives used must be dry and fully cured, and must not leak onto the open surface of the Large Letter.	M
		• Large Letters must not be stuck or caught together.	M
		• The glue must not run out onto the outside of the Letter or produce protruding mounds on the Letter.	
		• The glue must not be brittle or easily broken.	M
		• The glue should be no more than 80 microns thick	H [20]
		• All unfolded sides must be glued with a continuous seal or with a line of 'dashes' of adhesive that must be at least 10mm long and no more than 5mm apart.	M
Wrap Consruct. & Design	Peel Adhesion	The peel adhesion strength of the glue that is used for the side seals has yet to be determined. Paper fibres must be seen to tear if the seal is peeled apart.	M
		The adhesive used for the flap/long seal may be semi-permanent,	H [10]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H [21]
	Porosity	The paper used should have a porosity value of less than 700 ml per minute (BS 6538-2 - Air permeance of paper and board).	L [22]
	Window Location	Where a window is required on the same side of the mailer as the Flap / Long Seal, it must be located at least 25mm away from the Flap / Long Seal.	M
		The preferred location for any window that is required is on the opposite side to the Flap / Long Seal.	H [23]

8.2 Paper Wrap - Zip Tie

These requirements apply to Paper Wrap Mailers in addition to the generic Large Letter requirements and physical Paper Wrap Large Letter requirements at section 6.1.

[18] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling.
[19] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.
[20] Glue welds greater than this thickness may cause mechanical handling issues.
[21] This facilitates Mailmark, address, and Indicia reading.
[22] This facilitates the single item sorting when mail is placed on the machine (i.e. fewer double fed Letters and missorts).
[23] This avoids any weaknesses that may result from the proximity of the window to the Flap / Long Seal.

Category		Specification Requirement	M/R
Zip Tie Perforations	Definition	These perforations consist of 2 lines of parallel cuts (holes) and paper bridges in the Letter that form a perforated strip. Access to the Letter content is gained by tearing the strip along the lines of perforations in a particular direction. 	
	Orientation	The mailpiece must be in either landscape or portrait orientation (square letters are not acceptable).	H
	Design	• The zip tie must always be placed on the back of the mailpiece.	H
		• The zip tie may be positioned either horizontally or vertically, but the 'Tear' direction of the tie is dependent upon the orientation of the mailpiece. (This is defined in Figure 45 and Figure 46; the orientation and 'Tear' directional requirements relative to position of the Indicia on the front of the Letter being illustrated).	H
		• The zip tie must be located on a flap that is at least 40mm wide (see 46).	H
		• The zip tie must be positioned at least 9mm from the edge of the flap (see 46).	H
	Paper Weight	At least 150 gsm.	H
	Cuts & Bridges	• Only one zip tie is permitted on each mailpiece.	H
		• The zip tie must be die cut into the mailpiece.	H
		• The dimensional requirements for the cut of the zip tie are provided in Figure 48.	H
		• The cuts must be rectangular and have a width of no more than 0.1mm.	H
		• All cuts and bridges must be of uniform size.	H
	Sealing	• The perforated edges must be securely sealed all round from the perforation to the letter edges.	H

8.3 Paper Wrap - Addressing

Addressing requirements are the same as those for other Large Letters, with the exception of the requirements provided below. These are specific to Large Letter Paper Wrap requirements and enable the Indicia, Delivery Address and Return Address to be printed within a 50mm high band where paper wrap is used.

Category		Specification Requirement	M/R
Delivery Address	General	The PAF Delivery Address [24] must not be printed in the border area :	
		• Landscape - 15mm to the top, left, right, and the bottom.	M
		• Portrait - 15mm to the top, left, right, and the bottom.	M
	Delivery Address Location – Paper Wrap	• The Delivery Address must be positioned below and to the right of the Return Address.	M
		• The Delivery Address must be positioned below and to the left of the Indicia.	M
		• The Delivery Address block and the Mailmark code must not be printed over or beneath the long flap/seal.	M

9. Mailmark Code

Mailmark requirements are the same as those for Letters except for the location as detailed below.

[24] This is specifically the delivery address. The addressee and any MDI content may encroach into the 15mm top clear zone.

Category	Specification Requirement	M/R
Location – 2D & 4-State Codes	The Mailmark barcode must not be printed in the border area (see Figure 43 and Figure 44):	
	• Landscape - 15mm to the top, left, right, and the bottom where the Mailmark code is printed on paper, paper wrap, polymer envelope or where it is printed on an insert (carrier sheet) in a poly wrapped Large Letter.	M
	• Portrait - 15mm to the top, left, right, and the bottom where the Mailmark code is printed on paper, paper wrap, polymer envelope or where it is printed on an insert (carrier sheet) in a poly wrapped Large Letter.	M
	• Where there is Lateral Movement of the Insert within a Polymer Wrap Large Letter and the address is printed on the film, if the outer is larger than the insert, the border clear zone increases because the excess film may fold under the insert during processing. The Mailmark Code must not encroach into a border of 15mm, plus the amount of excess poly (this is lateral insert movement) which can be a maximum of 30mm. e.g. 20mm excess poly plus the 15mm border clear zone requirement means that the barcode would be printed 35mm from the edge of the wrap.	M
	• The Mailmark Code may be printed within the Indicia Area provided the Indicia and Mailmark clear zones are maintained.	M
	• The code must not be printed over the edge of the envelope flap, on a zip tie or under the longitudinal seal.	M

Mailmark Large Letters – Figures

1. Physical Requirement Figures

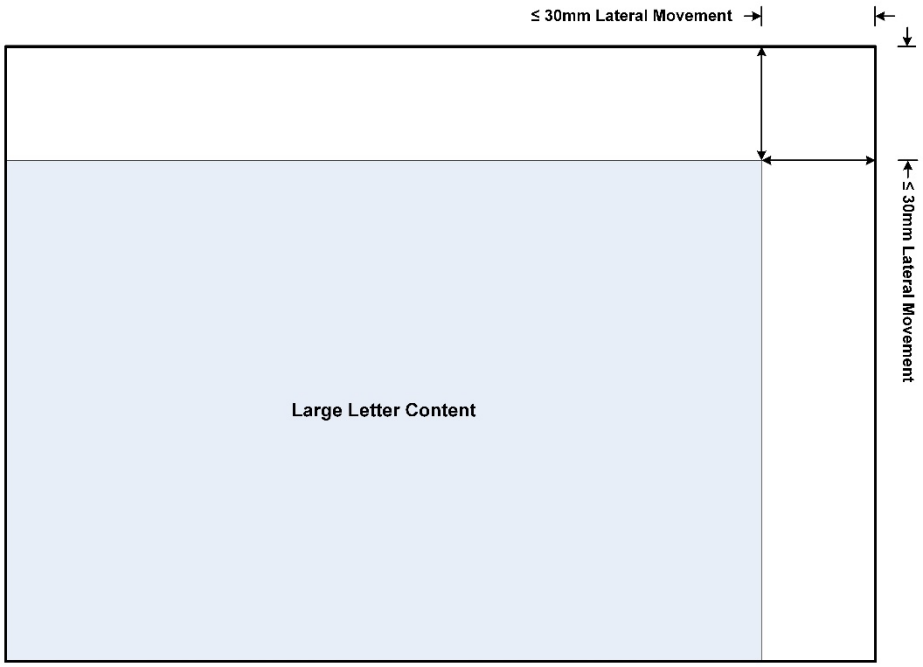

Figure 35 – Large Letter Lateral Movement (Not to Scale)

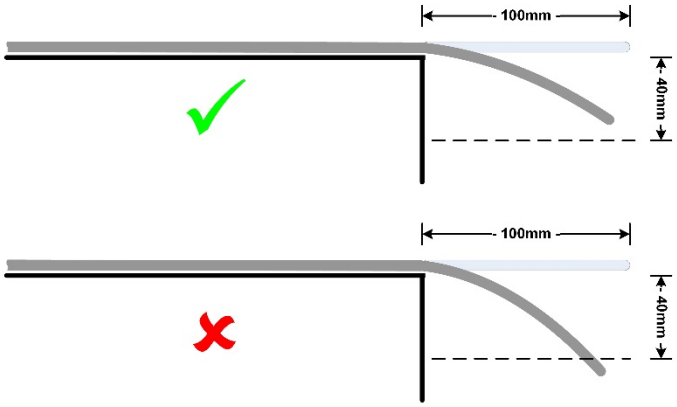

Figure 36 – Large Letter Flexibility (Not to Scale)

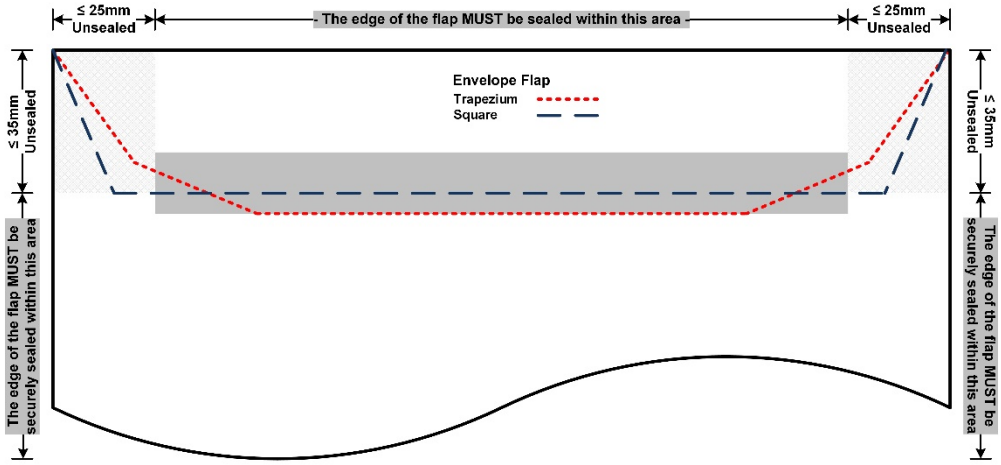

Figure 37 – Large Letter Sealing – Paper (Not to Scale)

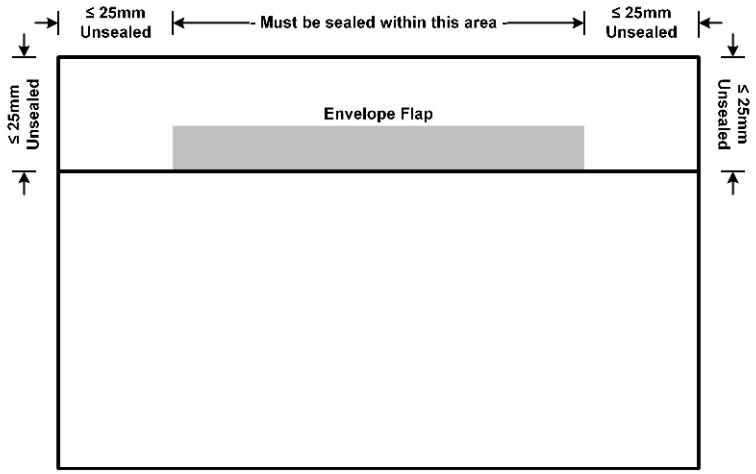

Figure 38 – Large Letter Sealing – Poly Envelope (Not to Scale)

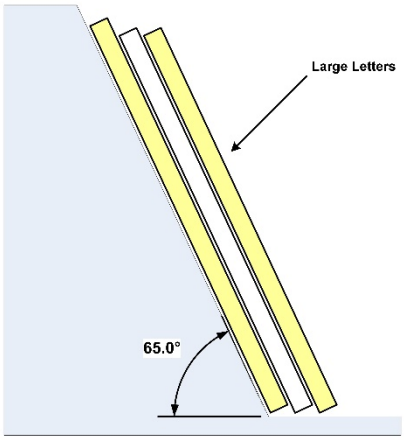

Figure 39 – Large Letter Separation – (Not to Scale)

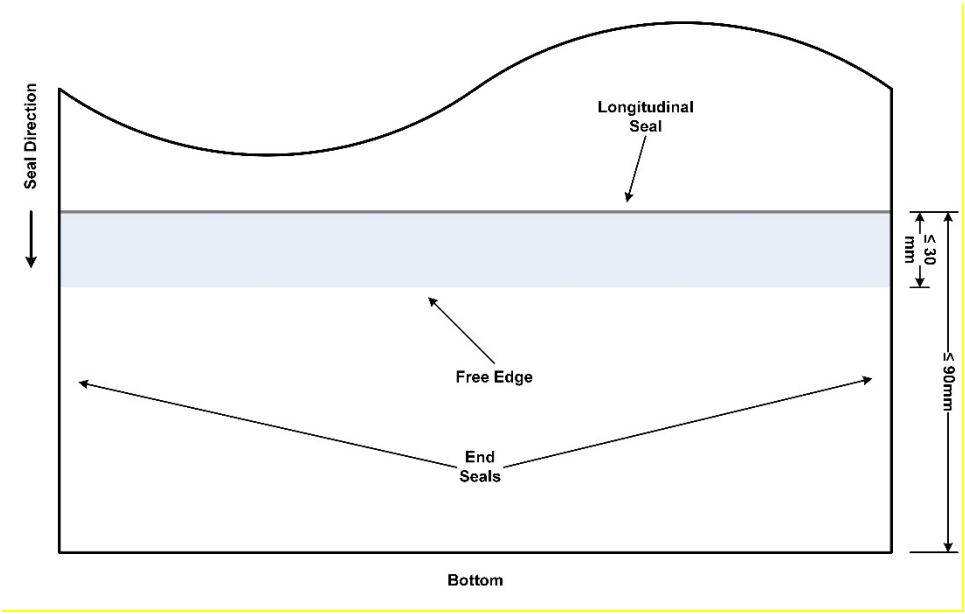

Figure 40 – Large Letter Longitudinal Seal – Poly Wrap (Not to Scale)

2.

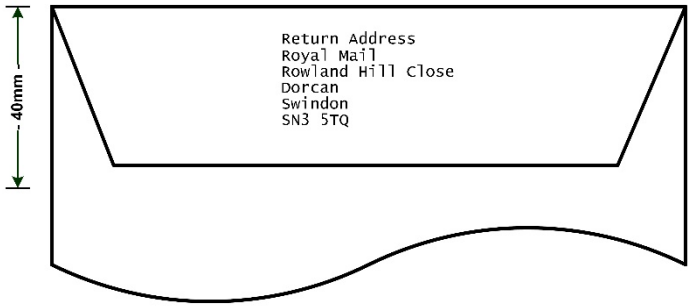

Figure 41 – Large Letter Return Address Preferred – Back (Not to Scale)

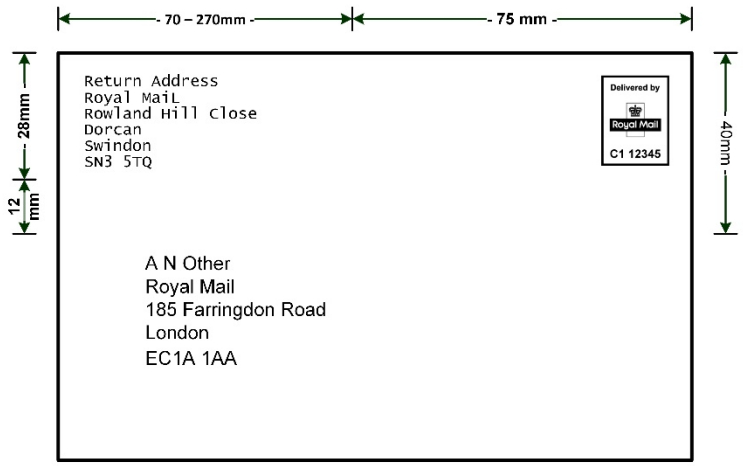

Figure 42 – Large Letter Return Address – Front Landscape Example (Not to Scale) Update

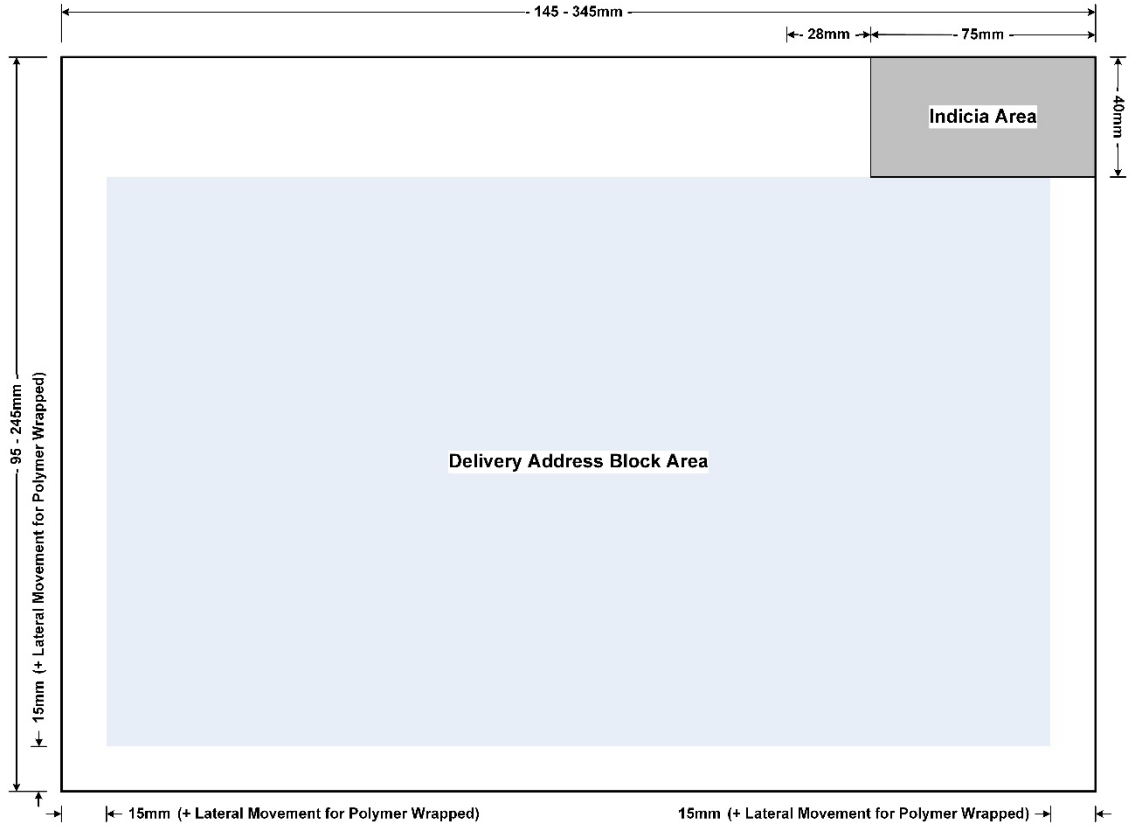

Figure 43 – Large Letter Clear Zones – Landscape (Not to Scale)

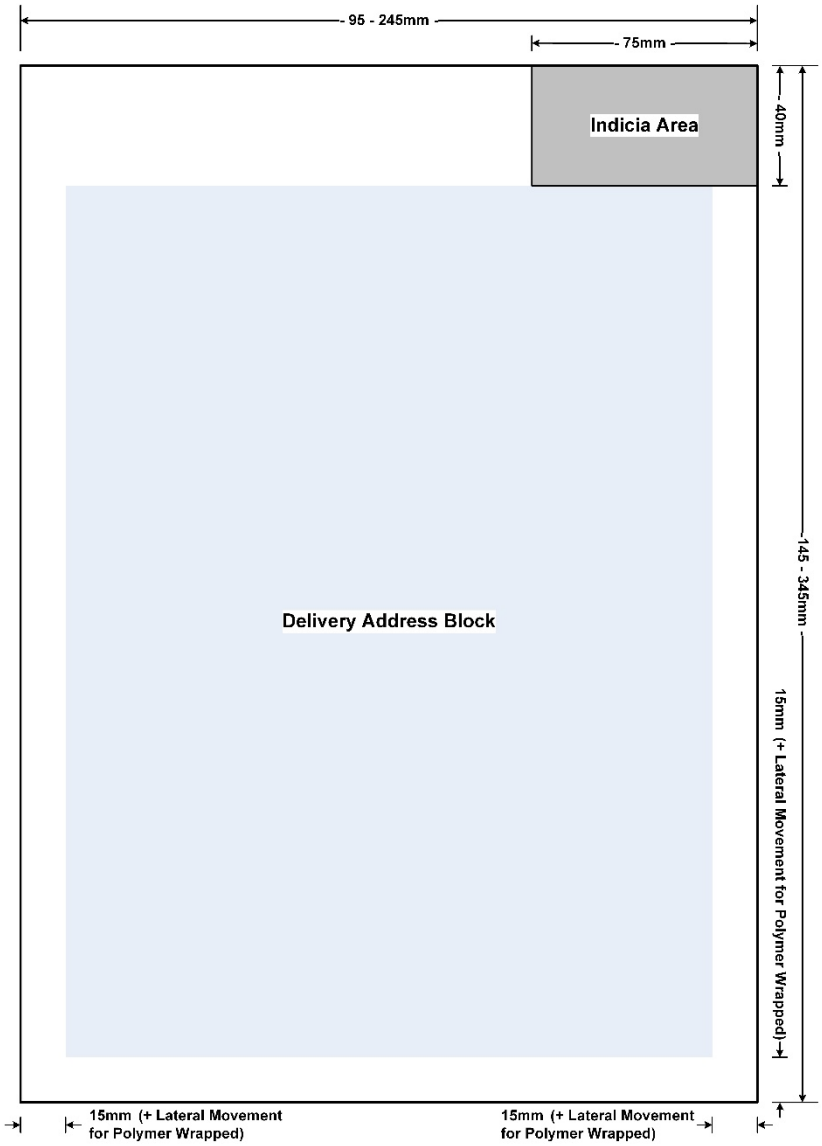

Figure 44 – Large Letter Clear Zones – Portrait (Not to Scale)

2. Paper Wrap Mailer Figures

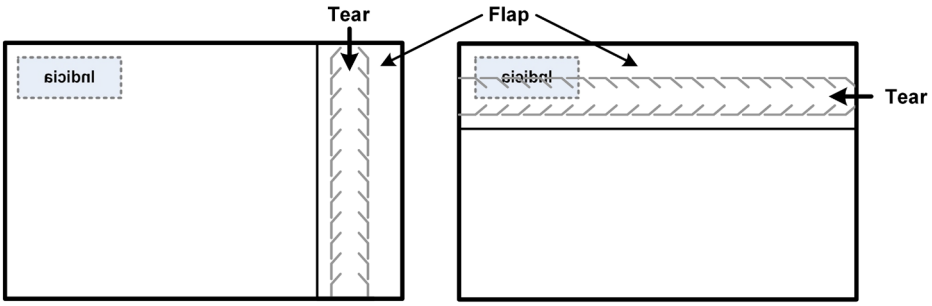

Figure 45 - Zip Tie Letter Orientation (back view) – Landscape Mail (Not to Scale)

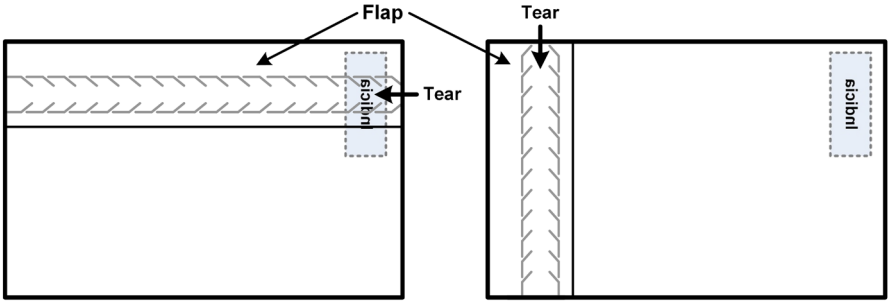

Figure 46 - Zip Tie Letter Orientation (back view) – Portrait Mail (Not to Scale)

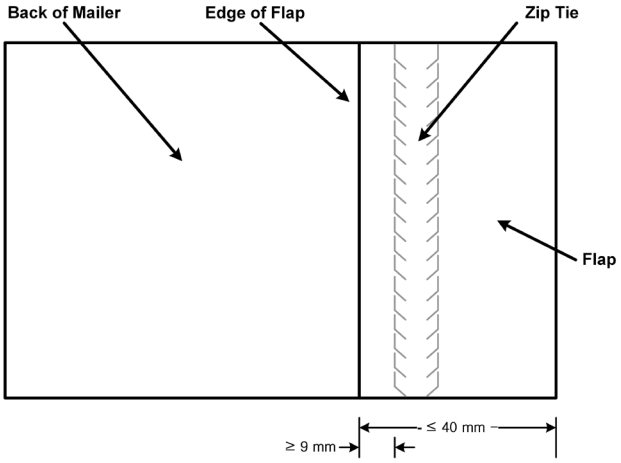

Figure 47 - Zip tie 'Envelope' Flap (Not to Scale)

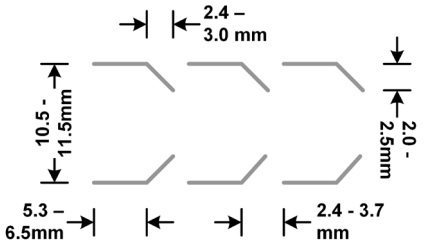

Figure 48 - Zip tie Dimensions (Not to Scale)