1. Mailmark Large Letters – Specification Requirements

The document sets out physical design, Indicia, 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. All the specifications as set out in this document are required.

To help you with identifying how Royal Mail treats items which do not meet the specification, we have categorised and noted individual requirements as Mandatory (M), High Risk (H) or Low Risk (L) :

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

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

The requirements in this section apply to the finished Large Letters as presented to Royal Mail.

1.1 Mailmark Large Letters – Physical

1.1.1 Mailmark Large Letters – Physical – Generic

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)	Rectangular Minimum – 95mm x 145mm, Maximum – 245mm x 345mm Square Minimum – 145mm x 145mm, Maximum – 245mm x 245mm	M
	Thickness	Minimum – 0.5mm, Maximum – 13mm	M
	Weight	Minimum – 10g, Maximum – 750g	M
	Aspect Ratio (rectangular items)	Subject to maximum and minimum dimensions, the length of rectangular mailpieces must be at least 1.4 times greater than the width of the Large Letter. e.g. A Large Letter of 200mm in height would have a minimum length of 280mm [1].	H [3]
	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. • Non-metallic Punch & bind bindings on the short edge [2] are acceptable if aligned to left edge of the mailpiece. i.e. To the left for landscape items and at the top for portrait items.	M L [3]

[1] Height @ 200mm x 1.4 = 280mm.
[2] Long edge bindings have not yet been evaluated.
[3] This enables effective presentation to the machine and subsequent processing.

Category		Specification Requirement	M/R
Size, Shape & Design Cont.	Content / Inserts Cont.	• The spines of magazine inserts should be located on the reference edge [4].	L [3]
	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. • The lateral movement of the largest paper insert should be no more than 30mm (see Figure 1).	M H [5]
	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 2) :- o 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[6]. o 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.	M
	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 5).	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 a payment indicia or 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 [7] L [7]

1.1.2 Mailmark Large Letters – Labels

Labels may be used for address and/or indicia content and/or Mailmark code content.

Requirements for the location of the indicia, delivery address block, return address block, and Mailmark codes remain as specified in sections 2.1.1 - 2.4.

Requirements for Mailmark code quality, clear zones, skew, opacity etc. remain unchanged.

Category		Specification Requirement	M/R
Physical	Peel adhesion	The peel adhesion strength of the label must be sufficient to ensure that fibre tear is be exhibited on separation	M
	Shape	Labels should be rectangular or square and have radiused corners	H [8]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity)	H [9]

[4] 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 Large Letter to be processed through the machines efficiently.
[5] 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 and consequent machine jams.
[6] Where there is a difference in the weight at the short edges, the heaviest edge must overhang.
[7] To reduce any potential for address reading errors,
[8] This facilitates address reading and optimises label adhesion.
[9] This facilitates Mailmark, address, and Indicia reading.

1.1.3 Mailmark Large Letters – Physical – Paper Envelopes

Category		Specification Requirement	M/R
Paper Envelope Construction	Material	• Envelopes must be made from **paper only** and have NO open apertures. • Perforations (including Zip Tie perforations) must not be used on Large Letters.	M M
	Flaps	The opening flap may fold to either the back or the front of the Large Letter.	L [10]
	Sealing	• Adhesives used must be dry and must not leak onto the open surface of the Large Letter. • Large Letters must not be stuck or caught together. • Envelopes must be securely sealed on the front, back, and all edges. • 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 3).	M M H [11] L [12]
	Paper Weight	Minimum 70gsm for envelopes & minimum 200gsm for postcards	H [13]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H [14]
	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 [15]
	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 [16]
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. • The Delivery Address block should be visible through the window. • 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.	M H [17] H [18] H [18]
	Number	There should be no more than 1 window on the front of the Large Letter.	L [19]
	Size	The window must take up no more than 25% of the surface area.	M
	Shape	Windows should be rectangular (with rounded corners).	L [13]
	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 12 and Figure 13).	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 [17]
	Haze	The maximum haze value for the window should not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).	H [17]

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

1.1.4 Mailmark Large Letters – Physical – Paper Wrap

These requirements apply in addition to the generic Large Letter requirements.

Category		Specification Requirement	M/R
Paper Wrap Construction & Design	Material	• Envelopes must be made from **paper only** and have NO open apertures.	M
		• The Wrap must be sufficiently robust to tolerate processing and manual handling without tearing or splitting at the seals. Perforations (including Zip Tie perforations) must not be used on Large Letters.	M
	Paper Weight	Minimum 90 gsm	H [20]
	Lateral Movement	• The lateral movement of the largest paper insert must be no more than 20mm.	M
	Folds & Edges [21]	• 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 [13]
		• The free edge of the flap/long seal should be less than 30mm deep.	H [13]
		• The preferred location for the flap/long seal is on the back of the Large Letter.	L [22]
		• 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 [22]
	Adhesive Application	• Where there are gaps in the continuous seal adhesive application, they should be ideally located at top of the mailer and may be on left and / or the right side and should be no more than 5-10mm long.	H [23]
	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 adhesive must not run out onto the outside of the Large Letter or produce protruding mounds on the Large Letter.	
		• The adhesive must not be brittle or easily broken.	M
		• 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
		• The adhesive should be no more than 80 microns thick	H [24]
	Peel Adhesion	• The peel adhesion strength of the adhesive 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 [13]

[20] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling.
[21] Cross-strapping of bundles should be avoided. Short edge bundling is acceptable.
[22] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.
[23] This aims to maximise the strength of the side seals, whilst preventing bursting and potential machine input issues.
[24] Adhesive welds greater than this thickness may cause mechanical handling issues.

Category		Specification Requirement	M/R
Paper Wrap Cont.	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H [25]
	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 [26]
	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. The preferred location for any window that is required is on the opposite side to the Flap / Long Seal.	M H [27]

1.1.5 Mailmark Large Letters – Physical – Polymer Wrap

Category		Specification Requirement	M/R
Polymer Wrap Construction & Design	Material	• Polymer Large Letters must be made from a polymer film [28]. e.g. polyethylene.	M
		• The film must be intact, undamaged and must not be punctured, split, or torn [29].	M
		• The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals.	M
		• The single layer film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter.	M
		• 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°).	H [25]
		• Where the Delivery Address is to be read through the film, the haze value should not exceed 75 % (ASTM D1003-00 Procedure A (Hazemeter)).	H [25]
	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.	M
		The requirements for the Longitudinal Seal and its associated flap are as follows (see Figure 8) :-	
		o The seal for the Polymer wrap must run along the length of the Large Letter.	M
		o The seal must be secured along the whole length of the seal and at each end.	M
		o The free edge of the seal must be less than 30mm deep.	H [30]
		o When located on the front of the Large Letter, the seal must not be over the Delivery Address Block or the Mailmark Code.	M
		o The preferred location for the seal is on the back of the Large Letter.	L [30]

[25] This facilitates Mailmark, address, and Indicia reading.
[26] This facilitates the single item sorting when mail is placed on the machine (i.e. fewer double fed Large Letters and missorts).
[27] This avoids any weaknesses that may result from the proximity of the window to the Flap / Long Seal.
[28] Starch based wraps (such as potato and maize starch) are untested. If they are used, they must the same standards that are required for synthetic polymers. Haze, opacity, and the strength of the polymer are particularly important.
[29] The only exception being polymers that are perforated for child safety purposes.
[30] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.

1.1.6 Mailmark Large Letters – Physical – Polymer Envelope

Category		Specification Requirement	M/R
Polymer Envelope Construction & Design	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 [29].	H [30]
		• 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
	Sealing	• The polymer envelope must be fully sealed.	M
		• Any adhesive sealed edges other than the opening flap must be sealed to the edge of the Large Letter.	M
		• The adhesive must not run out onto the outside of the mail item or produce protruding mounds on the Large Letter.	M
		• The adhesive must be fully cured prior to presentation of the mailing to Royal Mail.	M
		• The adhesive 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 4).	H [13]

1.1.7 Mailmark Large Letters – Physical – Unwrapped (Open) Mail

The requirements in this section are provided for unwrapped mail that is not enclosed or sealed. Open sides may be tabbed if required.

Category		Specification Requirement	M/R
Unwrapped (Open) Mail Design	General	Standard physical requirements for paper Large Letters apply (see section 2.1.1), with the addition of the following specific requirements.	M
	Specific Requirements	• The spine must always be on a long edge, and this must be the reference edge [31].	M
		• The spine must be Perfect Bound, or saddle stitched. (Punch & bind bindings are not permitted).	M
		• Staples that are used to bind the booklet must be fully pushed through the outer cover and bent flat on the inside.	M
		• All pages must be secured to the binding.	M
		• Loose inserts are not permitted.	
		• Covermounts / 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 100 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 (except any gatefold element of a cover).	M
	Gatefold Magazine Requirements [32]	• Minimum magazine dimensions - Height 205mm x Length 280mm x 4mm thick	M
		• The cover must each have a paper weight of at least 115 gsm.	M
		• The cover must be no more than 2-5mm shorter than the content pages (See Figure 6).	M
		• The gate page must be no more than 5mm short of the spine (See Figure 6).	M

[31] 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 Large Letter to be processed through the machines efficiently.

[32] Single or double gatefolds are permitted.

1.2 Mailmark Large Letters – Indicia & Customer Access Indicator

Indicia requirements are the same as those for Letters with the Access PPI, Stamp-Like Indicia & 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 Large Letter, above and to the right of the Delivery Address and in the top right corner of the Large Letter in the Indicium area.	M

1.3 Mailmark Large Letters – 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 must not be printed in the border area (see Figure 12 and Figure 13): • 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 [33] (See Figure 7)	• 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 – Polymer Wrap	• 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
		• 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	Fonts	Italic, bold, pseudo script, serifs, computer zero (Ø) and underlining must not be used.	M
	Print Quality	The return address block MUST be printed using a dark colour (preferably black) on a light background.	M
	Location	The return address location is determined by the dimensions of the Large Letter :- <u>Large Letters up to 162mm x 229mm</u> The return address must be located on the back of the Large Letter and centred within the top 40mm (see Figure 9) <u>Large Letters over 162mm x 229mm</u> The return address must within the top 40mm of the mailpiece and may be located :- • On the back of the Large Letter and centred. This is the preferred location as it avoids any confusion with the Delivery Address block (see Figure 9), or • On the front of the Large Letter from the top left corner to the left end of the indicia area, with no element closer than 75mm from the right edge and no closer than 12mm to the Delivery Address. (see Figure 10 - Figure 11).	 M M

[33] The Large Letter Paper Wrap requirements enable the Indicia, Delivery Address and Return Address to be printed within a 50mm high band. Using a small indicia design will maximise the available space for the address.

1.4 Mailmark Large Letters – Mailmark Code

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

Category	Specification Requirement	M/R
Location – 2D & 4-State Codes	The Mailmark barcode must not be printed in the border area (see Figure 12 & Figure 13) :	
	• Landscape - 15mm to the top, left, right, and the bottom where the Mailmark code is printed a 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 a 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 or under the longitudinal seal.	M

1.5 Mailmark Large Letters – Figures

Figure 1 – Large Letter Lateral Movement (Not to Scale)

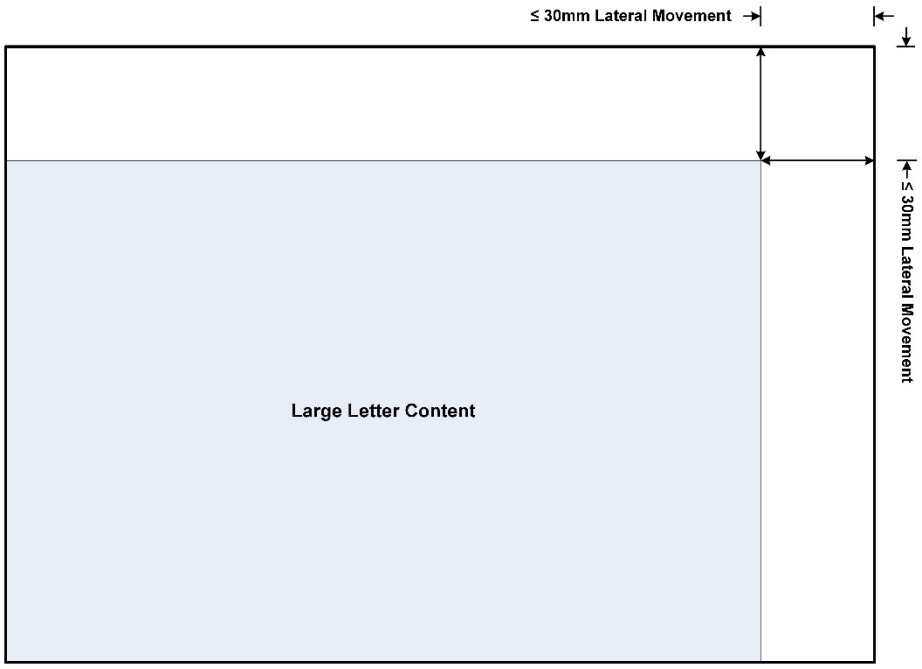

Figure 2 – Large Letter Flexibility (Not to Scale)

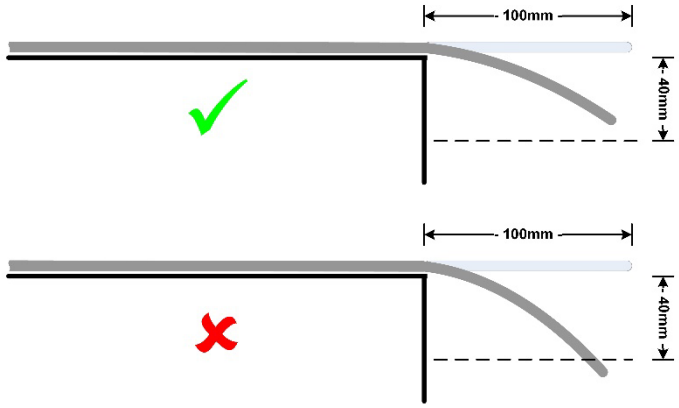

Figure 3 – Large Letter Sealing – Paper (Not to Scale)

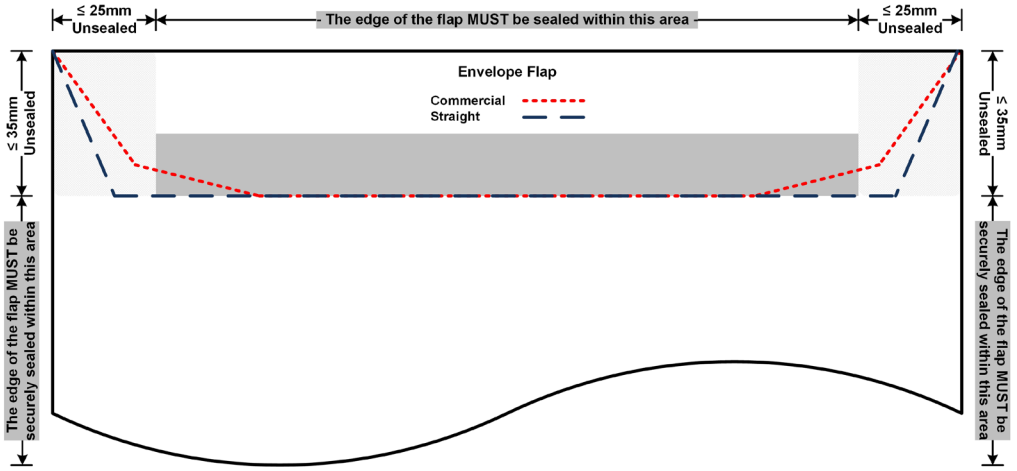

Figure 4 – Large Letter Sealing – Poly Envelope (Not to Scale)

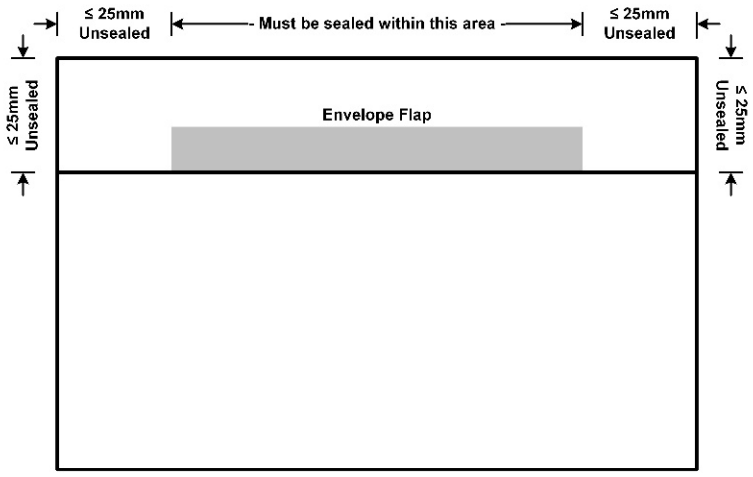

Figure 5 – Large Letter Separation – (Not to Scale)

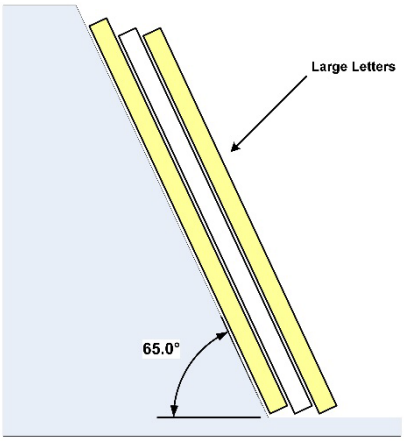

Figure 6 – Large Letter Gatefold – (Not to Scale)

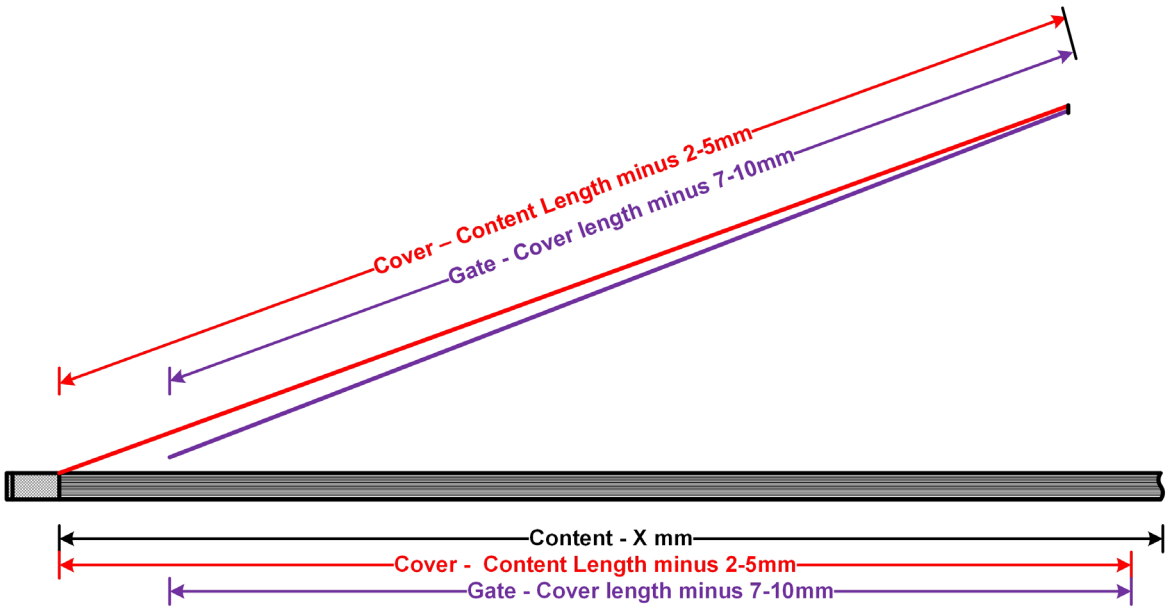

Figure 7 – Large Letter Paper Wrap – Printing (Not to scale)

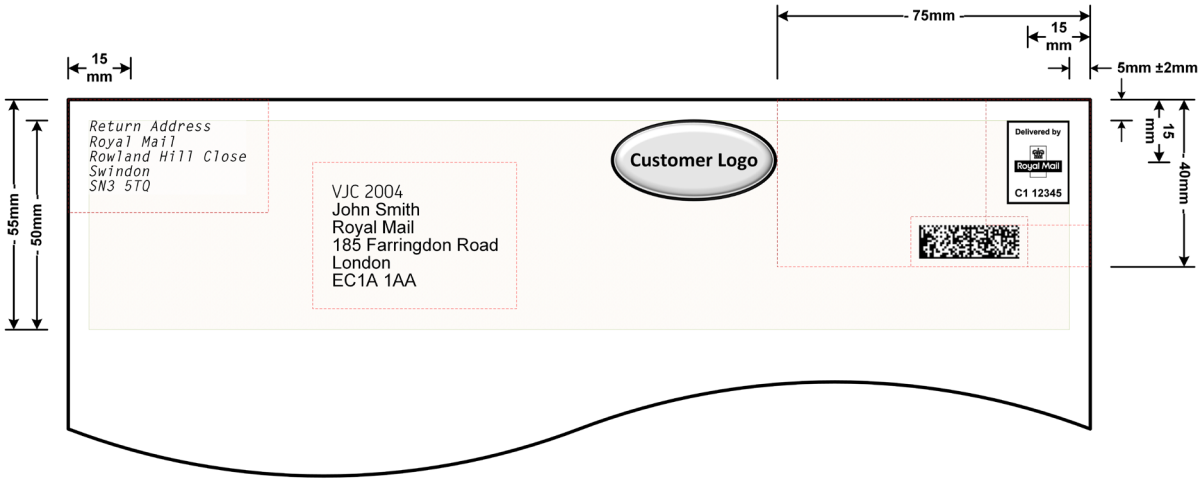

Figure 8 – Large Letter Longitudinal Seal – Poly Wrap (Not to Scale)

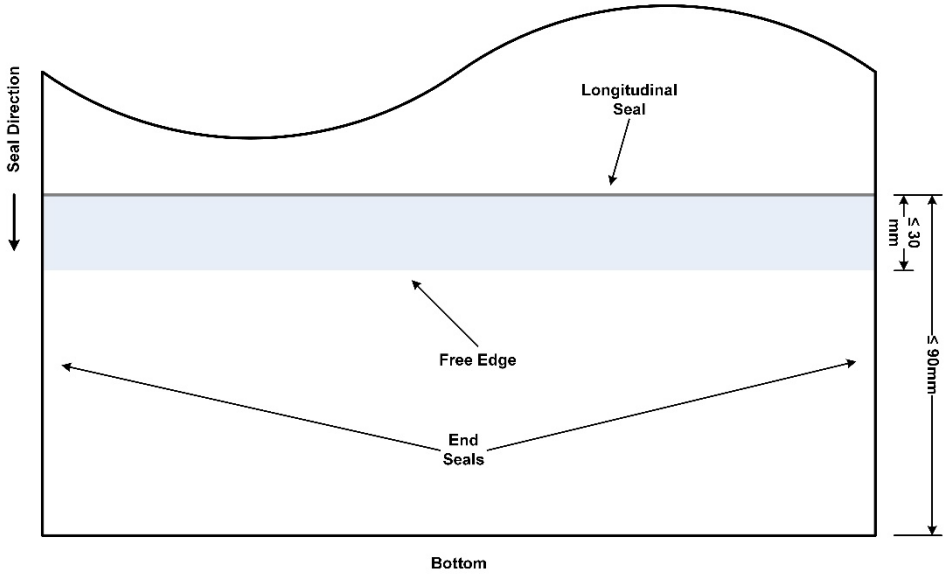

Figure 9 – Large Letter Return Address Preferred – Back (Not to Scale)

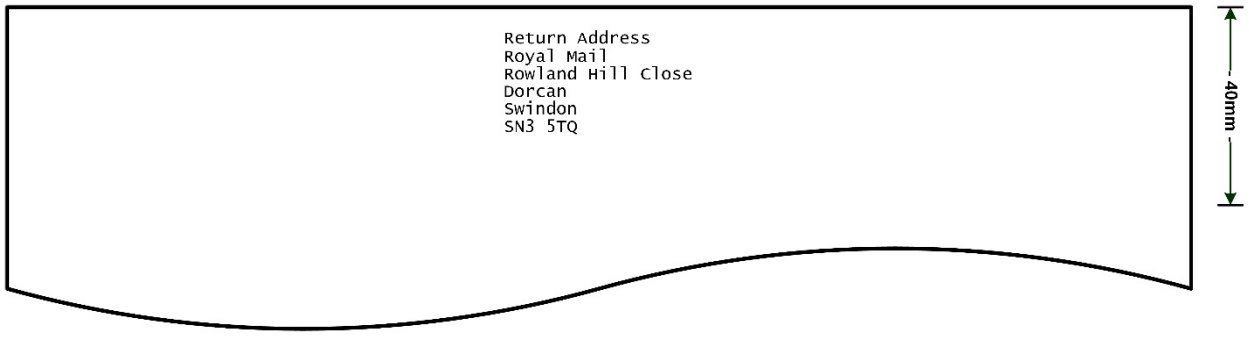

Figure 10 – Large Letter Return Address – Front Landscape Example A (Not to Scale)

Figure 11 – Large Letter Return Address – Front Landscape Example B (Not to Scale)

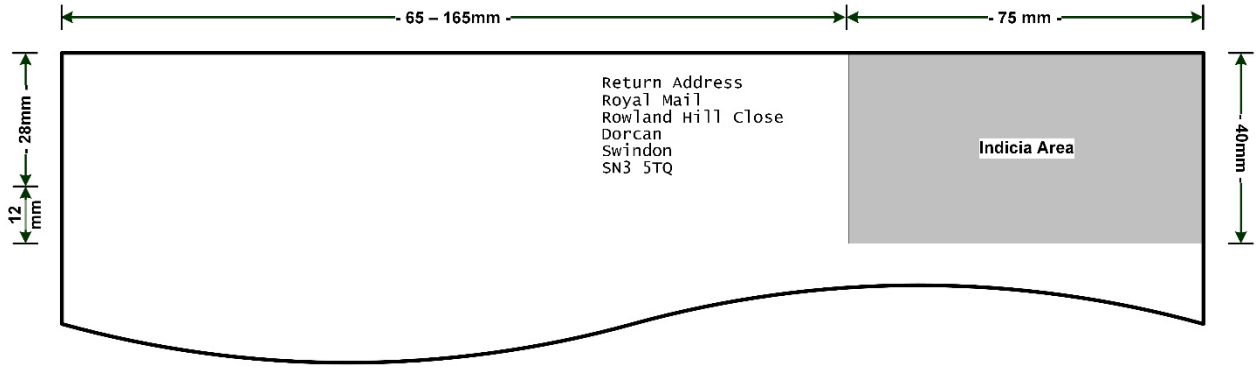

Figure 12 – Large Letter Clear Zones – Landscape (Not to Scale)

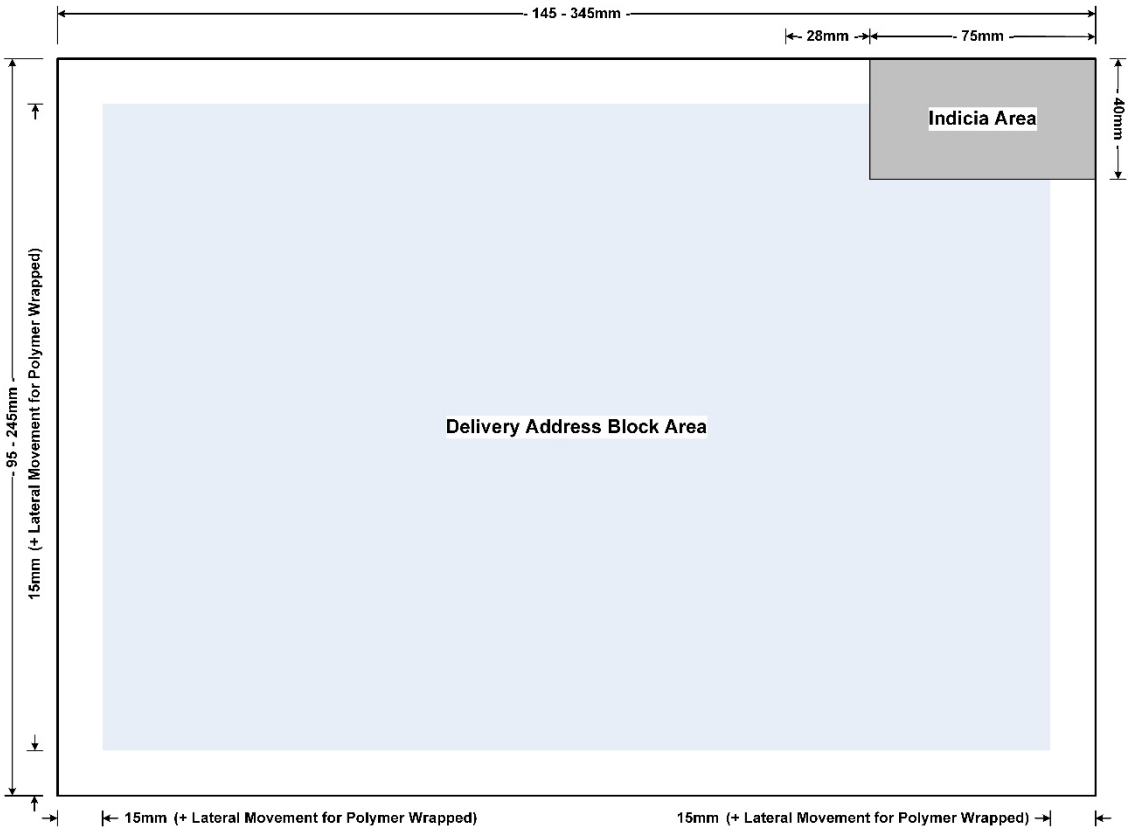
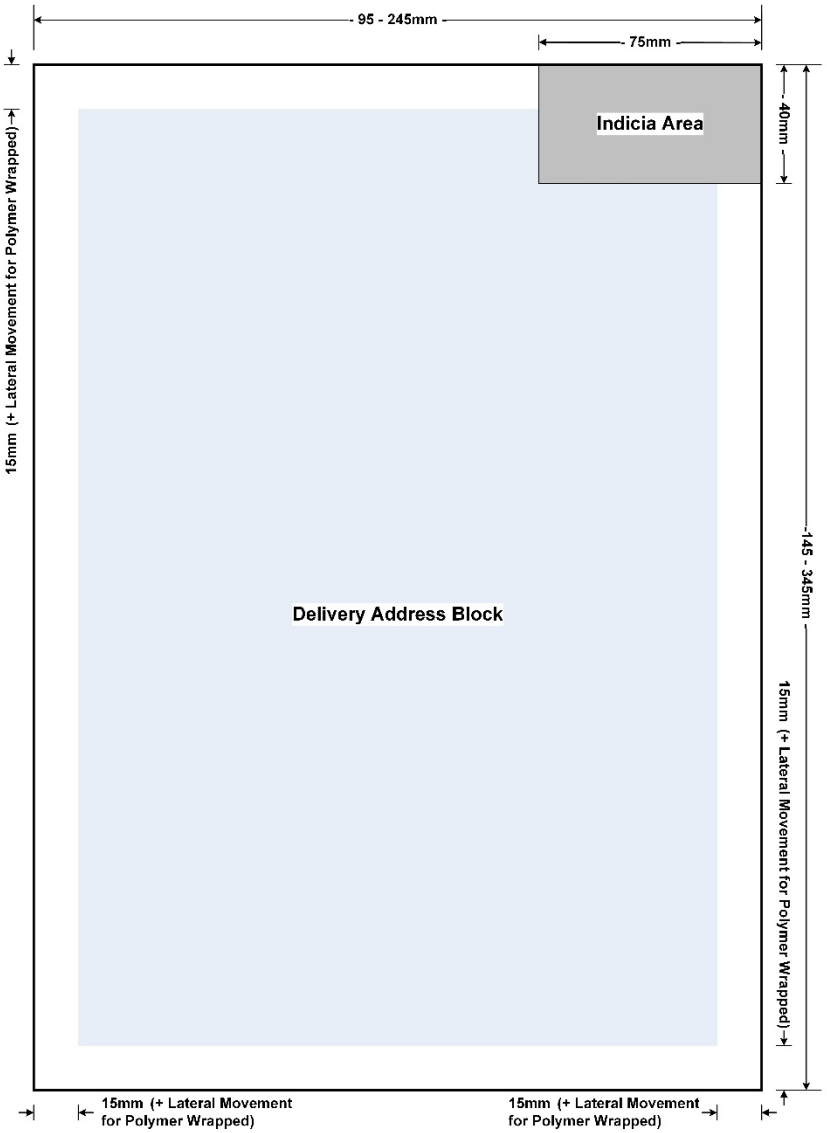
Figure 13 – Large Letter Clear Zones – Portrait (Not to Scale)