

1. Introduction

- a. OCR (Optical Character Recognition) describes the requirements for Letters and Large Letters so that they can be efficiently processed by automated mail processing equipment.
- b. Refer to Section 1 of this User Guide to find out more about the Services which OCR may be used with.
- c. This appendix sets out the physical design, Indicium, addressing, Codemark Clear Zones and other Royal Mail specifications that are required when posting Mailing items using OCR.
- d. The OCR specification is designed to ensure that Royal Mail Letter and Large Letter processing machines can process and read Letters and 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)':
 - Mailing Items that fail to meet the 'Mandatory' requirements are regarded as unmachineable and are very likely to have Adjustments applied.
 - Mailing Items which fail to meet the requirements that are identified as 'Recommended - High Risk' have a higher likelihood of performing poorly through our processing machines. Mailing Items that fail to meet these requirements are more likely to have Adjustments applied and may become damaged in our processing machines.
 - Mailing Items 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 the Mailing Items being damaged or Adjustments being applied.

1.1 OCR Letters – Physical

Category		Specification Requirement	MHL
Size & Shape	Shape	Rectangular or square with straight sides and 90° corners	M
	Orientation	Landscape only (See Figure 1)	M
	Size (H x L x D)	<u>Rectangular</u> Minimum – 90mm x 140mm, Maximum – 165mm x 240mm <u>Square</u> Minimum – 140mm x 140mm, Maximum – 165mm x 165mm	M
	Thickness	Minimum – 0.25mm, Maximum – 5mm	M
	Weight	Maximum – 100g	M
	Content / Inserts	<ul style="list-style-type: none"> Other metal objects such as keys, paper clips (more than 23mm long) pens, coins etc. must not be placed in the Letter. Inserts other than paper that are placed in an envelope should be fixed in central position (ideally on the reference edge) and attached to the largest paper insert. e.g. bank cards. The spines on booklet inserts should be located on the reference edge ². 	M H ¹ L ³
	Lateral Movement	<p>There are limitations on the lateral movement space that the insert may have ⁴. These are dependent upon the thickness of the Letter and apply to the largest paper insert (see Figure 2):</p> <ul style="list-style-type: none"> Where the thickness is 2mm – 5mm the lateral movement must be no more than 20mm. Where the thickness is 0.25mm – 2mm, the lateral movement must be no more than 30mm. 	M M
	Flexibility	Each Letter must be capable of being transported around a pulley with a radius of 140mm with a max force of 26 N (See Figure 3). e.g. The Letter should be able to curve smoothly around a No. 5 size football.)	M

¹ Lowers the risk of moving inserts breaking through the sides of the envelope / outer.

² The reference edge is a fold on a particular edge of the Letter, which enables it to be processed through the machines efficiently. The reference edge is the edge beneath the address for landscape rectangular and square Letters. .

³ This reduces the potential for mail damage during processing.

⁴ Excessive insert movement within the envelope may cause the envelope to buckle and/or become damaged in our automation equipment.

Category		Specification Requirement	M/R
Envelope Construction & Design	Material	Envelopes must be made from paper only and have NO open apertures ⁵	M
	Flaps	The opening flap may fold to either the back or the front of the Letter. Where the flap folds to the front (address side) of the Letter, its edge should not fall within the Tag Codemark clear zone.	H ⁶
	Sealing	<ul style="list-style-type: none"> Adhesives used must be dry and must not leak onto the open surface of the Letter. Letters must not be stuck or caught together. Traditional Envelopes must be securely sealed on the front, back, and all edges. DL and C5 Letters presented in trays must be sealed to within a minimum of 35mm from the fold of the envelope flap, and 35mm from the envelope sides (see Figure 4). For all other Letters presented in bags or bundles, the flap must be sealed to within a minimum of 35mm from the fold of the envelope flap, and 25mm from the envelope sides (see Figure 5). 	M
			M
			M
			M
			M
	Paper Weight	<ul style="list-style-type: none"> Minimum - 70gsm for envelopes Recommended minimum 200gsm for postcards 	M M
	Opacity	The paper used must be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity)	M
	Absorbency	The paper used must have an absorbency of 15–35 gsm of water in 1 minute (BS EN 20535 - Paper and board. Determination of water absorptiveness.)	M
	Porosity	The paper used must have a porosity value of less than 700 ml per minute (BS 6538-2 - Air permeance of paper and board.)	M
	Finish - Digitally Printed Mail	<p>When digital printing is used for mail, the pigment may rub off, transfer to adjacent surfaces (inserts and the envelope), crack, and become marked both during the manual and automated handling processes. The application of an ultraviolet (UV) cured varnish has been found to reduce the wear to digitally printed mail items. This provides a protective coating over the pigment. It should only be applied to the non-address side of the Letter as the characteristics of the varnish may make the mail unmachineable if applied to both sides ⁷.</p> <p>The pressure exerted on the Letter during automated processing may cause colour offset on digitally printed items. Therefore, it is recommended that there should be no off-set of print or colour transfer when the item is exposed to a pressure of 3.43kPa (35g per cm²). This equates to a weight of 8.5kg spread over the surface of a DL envelope, and 13.5kg for C5 envelopes.</p>	L ⁸
	One-Piece Mailer	See One-Piece Mailer Specification (including one-piece mailers, wrap mailers, coupon mailers, feature mailers, and machineable postcards) in section 1.5.1.	-
	Perforated Mailers	See Perforated Mail Specification (including perforations, zip tie, and pressure seal envelopes) in section 1.5.2.	-
Tabbed Mailers	Not permitted for OCR products	-	
Do Not Redirect	See separate Do Not Redirect Specification	-	
Logos & Advertising	<ul style="list-style-type: none"> Any logo or advertising slogan printed on the 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. 	H ⁹	
		H ¹⁰	
Window	Fixing	<ul style="list-style-type: none"> 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
		<ul style="list-style-type: none"> The Delivery Address must be visible through the window when tapped on all sides. The window film should be flat and fixed evenly across the surface area it is in contact with. 	M H ¹¹

⁵ Note that an unwrapped OCR Letter sized item will be treated in the first instance as an unwrapped Large Letter OCR and not a manual letter.

⁶ Tag codemark reading supports OCR mail processing.

⁷ They may have 'window-like characteristics' that reduce mechanical handling capability, increase static cling, and compromise codemark printing

⁸ The impact of this is limited to potential damage to the artwork and finish and it is highly unlikely to result in poor processing performance.

⁹ This will reduce any potential for address reading errors,

¹⁰ These may result in incorrect address determination.

¹¹ This ensures that the Letter is strong enough to withstand the rigours of mechanical and manual handling, and facilitates address reading.

Category		Specification Requirement	M/R
Window Cont.	Fixing Cont.	<ul style="list-style-type: none"> The window film should be robust enough not to become creased, crumpled or otherwise deformed. 	H ¹¹
	Number	There should be no more than 2 windows on the front of the Letter (or alternatively 1 on the front and 1 on the back).	H ¹²
	Size	The window(s) on the front of the Letter must take up no more than 50% of the surface area.	M
	Size & Shape	<ul style="list-style-type: none"> Front windows must be rectangular (with rounded corners). Where there are both front and back windows, the back window must be no more than 48mm in diameter and centred 31mm, plus or minus 2mm up from the bottom edge of the Letter. 	M M
	Position	<ul style="list-style-type: none"> Windows on the front of the envelope must avoid the indicia area and the codemark clear zones, and must be located at least 15mm from the top, left and right edges, and at least 18mm from the bottom edge (See Figure 9 to Figure 11). 	M
	Gloss	The maximum gloss value for the window must not exceed 150 when measured at 60°, in accordance with American Standard Test Method (ASTM) 2457.	M
	Haze	The maximum haze value for the window must not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).	M

1.1.1 OCR Letters – Physical Figures

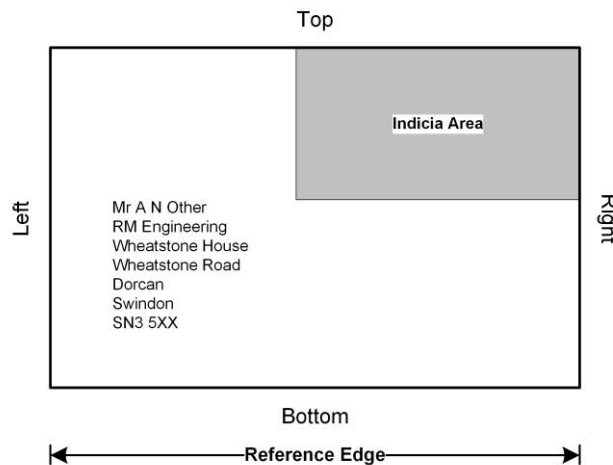


Figure 1 – Landscape Letter (Not to Scale)

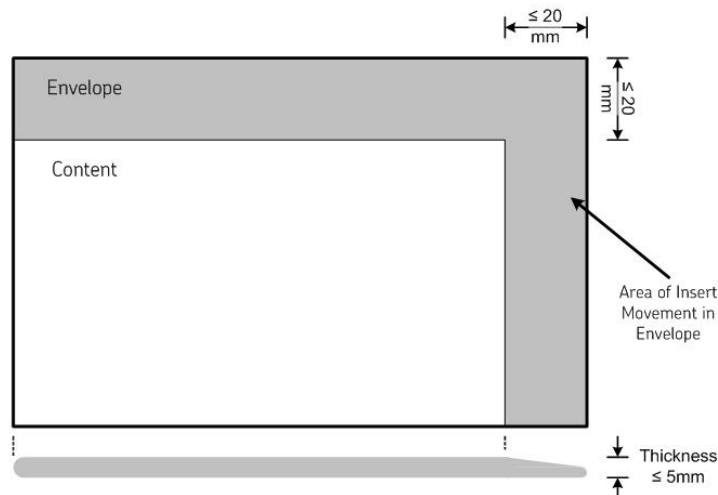


Figure 2 – Letter Inserts (Not to Scale)

¹² This facilitates address reading.

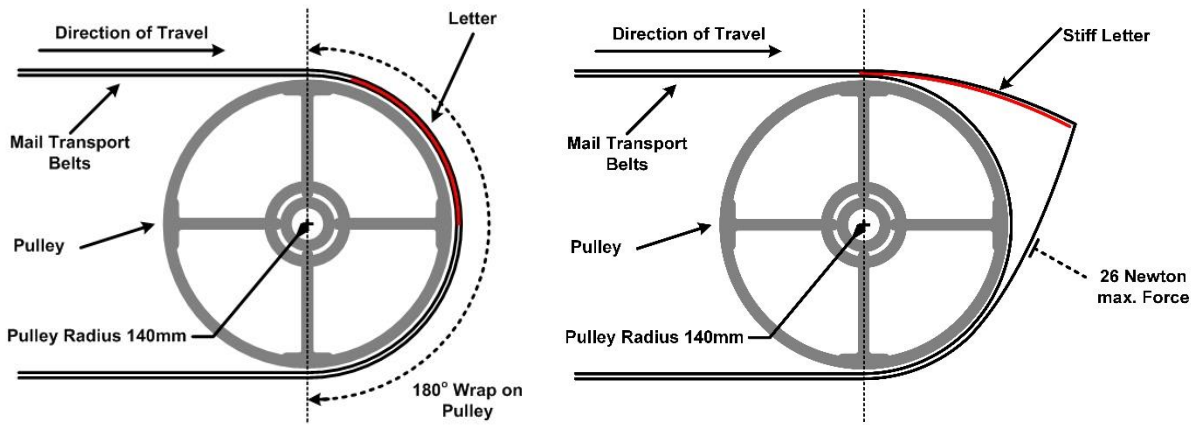


Figure 3 - Letter Flexibility (Not to Scale)

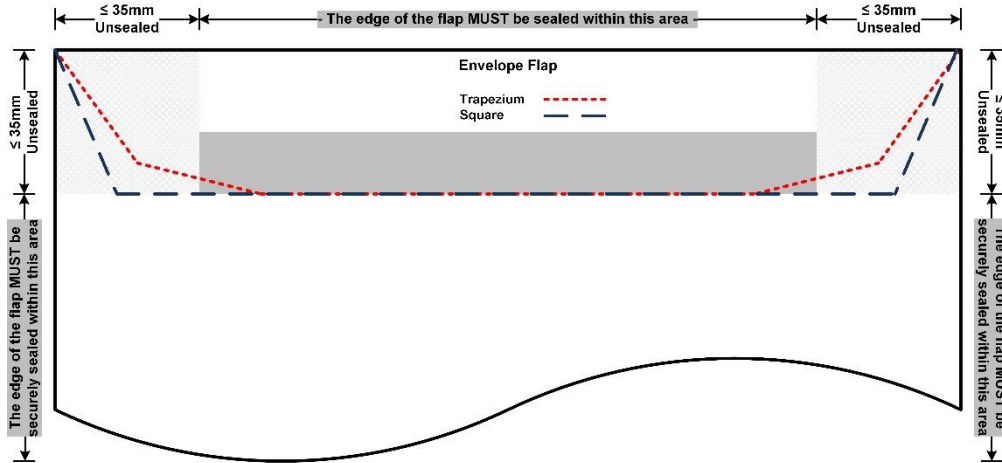


Figure 4 - Letter Sealing - Trayed (Not to Scale)

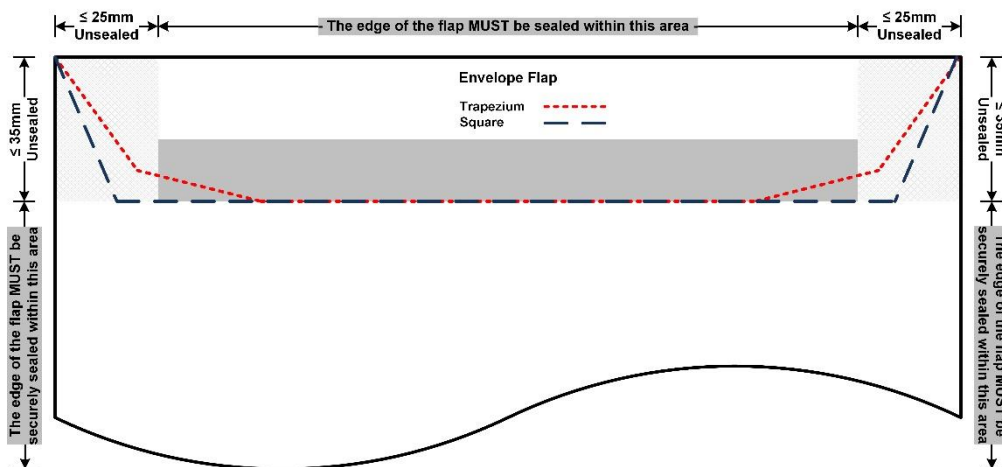
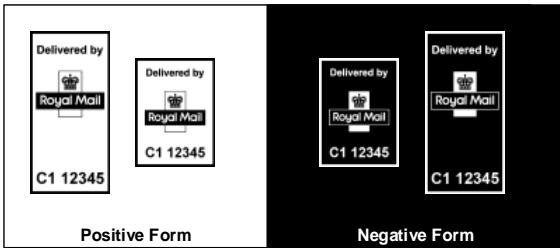


Figure 5 - Letter Sealing - Untrayed (Not to Scale)

1.2 OCR Letters – Indicium

1.2.1 Network Access Indicium & Customer Access Indicator

Category		Specification Requirement	MHL
Indicia	General	<ul style="list-style-type: none"> All Letters must carry an approved Indicium which has been agreed by Royal Mail and the customer. Only one Indicium must be printed on the Letter. 	M M
	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. This area is 75mm long & 40mm high (see Figure 9 - Figure 11).	M
RM Mail Access Indicator – PPI	Access PPI		
	Indicium Size	<ul style="list-style-type: none"> The small Indicium is 20mm high x 15mm wide (see Figure 6) The large Indicium is 30mm high x 15mm wide (see Figure 6) The Indicium must not be scaled. 	M M M
	Licence No.	<ul style="list-style-type: none"> The unique licence number in the form AN NNNNN must be printed beneath the cruciform and 1.25mm above the bottom border. The Licence number must be printed centred justified and using Arial 8.3pt Bold font. 	M M
	Clear Zones	<ul style="list-style-type: none"> A clear zone of 5mm must be provided to the left of the PPI. A clear zone of 5mm, plus or minus 2mm should be provided above, below, and to the right of the PPI. 	M H ¹³
	Indicium Format / Colour	<ul style="list-style-type: none"> Where the Indicium is in positive colour form, it will be printed in dark colour on a light-coloured substrate Where the Indicium is in 'negative' colour form, it will be printed in white on a dark coloured substrate. 	M M
	Indicium Printing	<ul style="list-style-type: none"> All elements should be sharp, solid and distinct. The Indicium should be printed at a minimum resolution of 300dpi. Where the Indicium is darker than the background, the Indicium contrast on homogeneous backgrounds should be at least 20%, and at least 40% for inhomogeneous backgrounds. Where the Indicium is lighter than the background, the Indicium contrast on homogeneous backgrounds should be at least 80%, and at least 60% for inhomogeneous backgrounds. 	H ¹⁴ H ¹⁴ H ¹⁴ H ¹⁴
	Indicium Skew	The skew should be no more than plus or minus 15° from the horizontal axis.	H ¹³
	Cust. Access Indic.	Location	This must be located 5mm to the left of the Royal Mail Access Indicator.
Shape		<ul style="list-style-type: none"> The Customer Access Indicator associated with the 20mm high and 15mm wide PPI Indicium must be no more than 20mm high and no more than 50mm wide. The Customer Access Indicator associated with the 30mm high and 15mm wide RM Access Indicium must be no more than 30mm high and no more than 50mm wide. 	M M
Content		Any words used within the Indicator must be printed using a font size of at least 10 point.	M
Clear Zones		A clear zone of 5mm, plus or minus 2mm should be provided above, below, and to the left of the Indicator.	H ¹⁵
Stamp-Like Indicia		See Stamp-Like Indicia Specification.	-
Digital Stamp		See Digital Stamp Specification.	-

¹³ The Indicia may facilitate the orientation of the Letter.

¹⁴ This ensures that the Indicia is human readable.

¹⁵ This is a preference that has no impact on mail processing.

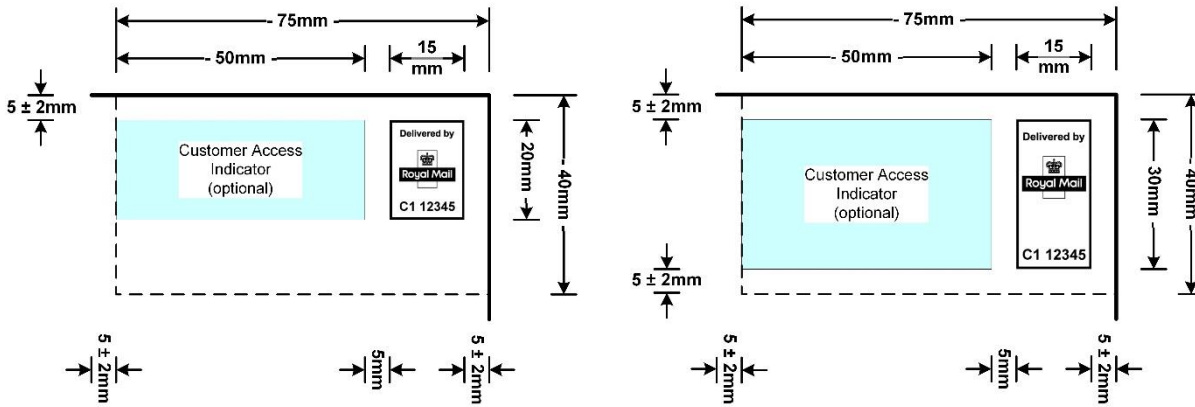


Figure 6 – Letter Indicia Location & Clear Zones

1.3 OCR Letters – Addressing

In this section, Mandatory requirements ensure that sufficient address content is provided to enable Royal Mail to read the address, and to deliver the Letters to the correct address.

Category		Specification Requirement		MHL
Potential Delivery Address Elements	The delivery address consists of the following components, and the PAF address may include premise elements together with one or more thoroughfare and locality elements followed by the postcode.			
	Premise Elements	<i>Mailer Defined Information</i>	VJC100	(Optional)
		<i>Addressee</i>	Ms A N Other Operations Director	Delivery Address block
		<i>Organisation</i>	Royal Mail	
		<i>Sub-building</i>	South Wing	
		<i>Building name</i>	Bell House	
<i>Building number</i>	B25 Bell Complex			
<i>Thoroughfare Elements</i>	<i>Dependant Thoroughfare</i>	The Mews 300 Western Road		
<i>Locality Elements</i>	<i>Double Dependant locality</i>	Otterley		
	<i>Dependant locality</i>	Hedge End		
	<i>Posttown</i>	Oxford		
	<i>Postcode</i>	OX4 5ZZ		
Delivery Address	General	<ul style="list-style-type: none"> There must only be two addresses printed on the Letter; a single Delivery Address block and a Return Address block. We will permit identical duplicate Delivery Addresses to be printed on the same side (for example charity mailers showing address stickers) providing they are within the permitted print area. The Delivery Address must be printed on the front of the Letter, on the same side and in the same orientation as the Indicia. No other addresses and nothing else that can be construed as looking like a Delivery Address must be printed on the Letter (with the exception of the Return Address). This includes any areas of an insert which may appear in the window of the item arising from insert movement. It is not permitted to have both English and Welsh addresses on an item. The premise to posttown address elements must follow the core PAF address content and a single language must be used for each of these address lines. i.e. This could be in English or Welsh (e.g. Swansea or Abertawe) subject to the PAF address summary definition or in Welsh where an alternative is specified in PAF. Customers cannot create bi-lingual English / Welsh addresses if they are not in PAF. 		M M M M
	Mailer Defined Information (Optional)	<ul style="list-style-type: none"> Mailer Defined Information (MDI) may optionally be included as an additional single line immediately above the addressee name. It must not include a barcode of any kind. The mailer defined information should be in a typeface (not underlined) and may comprise letters, numerals, punctuation marks, and ideograms in a single line above the addressee e.g. a reference number or Standard Selection Code (SSC). 		M L

Category		Specification Requirement	MHL
Delivery Address Cont.	Mailer Defined Information (Optional) Cont.	<ul style="list-style-type: none"> The mailer defined information must be left justified and aligned to the rest of the Delivery Address block. 	M
		<ul style="list-style-type: none"> The content may be of a different font and size to the other Delivery Address block elements. 	L
		<ul style="list-style-type: none"> The MDI may be totally visible, partially obscured, or totally obscured by the top edge of the window after the item is tapped on any or all four edges to induce maximum insert movement. 	L
		<ul style="list-style-type: none"> We will accept the addressee details tapping right up to the edge of the window or they can tap out partially to the top and right or completely to the top but recommend they remain fully visible at all times. 	L
		<ul style="list-style-type: none"> Word spacing within the MDI may exceed 5mm. 	L
		<ul style="list-style-type: none"> The line spacing should be consistent with the rest of the Delivery Address block. 	L
		<ul style="list-style-type: none"> The length of the mailer defined information should not exceed 64 characters. 	L
	Content	<ul style="list-style-type: none"> The Delivery Address must include the addressee information (unless the Partially Addressed product is being used.) and for all products, a full PAF address including the postcode is required. 	M
		<ul style="list-style-type: none"> A maximum of 2 lines of addressee information may be included above the PAF address. e.g. job title and department or section. 	H
		<ul style="list-style-type: none"> The number of characters per line of the delivery address block should not exceed 64 characters (including spaces). The county, although not required, may be included :- <ul style="list-style-type: none"> as the penultimate line of the address as the penultimate line of the address and printed after the posttown. as the final line of the address and printed before the postcode. 	L
		<ul style="list-style-type: none"> UK country (United Kingdom, England, Wales, Scotland, Northern Ireland) must not be included within the Delivery Address block ¹⁶. 	M
	Structure & Format	<ul style="list-style-type: none"> The Delivery Address must be printed as a 'block' of left justified text with uniform line spacing (1-4mm) and with no blank lines. 	M
		<ul style="list-style-type: none"> Each individual element of the address must be on a separate line. Note that the house number and the street name must always be printed on the same line. 	M
		<ul style="list-style-type: none"> The Postcode must always be printed in 'UPPER CASE', and must be on the last line of the Delivery Address. 	M
		<ul style="list-style-type: none"> There must be a gap of 1-2 spaces between the 2 parts of the postcode. 	M
		<ul style="list-style-type: none"> The posttown may precede the postcode on the last line of the address if they are separated by 1-2 spaces. i.e. London EC1A 1AA. 	M
<ul style="list-style-type: none"> Only punctuation that is included with the PAF address must be included, or alternatively all punctuation may be removed. 		M	
<ul style="list-style-type: none"> The Delivery Address must be printed in 'Title Case' (preferred) or 'UPPER CASE'. The word spacing must be 1-2 spaces and no more than 5mm. The Delivery Address block skew must be no more than plus or minus 5°. 		M	
Preferred Fonts	<ul style="list-style-type: none"> A Single font and font size should be used for the whole Delivery Address block and this should be printed using : <ul style="list-style-type: none"> 10-12pt font Normal character spacing Pitch set at 10-12 characters per inch. 	H	
	<p><u>Preferred Non-Proportionally Spaced Fonts are :-</u> <i>Courier, Courier New, Letter Gothic, Lucida Console, Lucida Sans Typewriter, OCR B, Word Gothic</i></p>	H	

¹⁶ This includes "England", "Great Britain", "Northern Ireland", "Scotland", "Wales" or "United Kingdom" and or the outlying British islands.

Category	Specification Requirement	MHL
Delivery Address Cont.	<p>Preferred Fonts Cont.</p> <p>Acceptable Proportionally Spaced Fonts are :- Arial, Avant Garde, Calibri, Estrangelo Edessa, Eurostile, Frankfurt Gothic, Franklin Gothic (Book), Gautami, Geneva, Gill Sans, Helvetica, Latha, Lucida Sans, Mangal, News Gothic MT, Optima, Ravi, Shruti, Trebuchet MS, Tunga, Univers, Verdana</p>	H
	<p>Fonts - General</p> <p>Any fonts that are used must be simple and easy to read. The following specifications must be followed:</p> <ul style="list-style-type: none"> • <i>Italic</i>, bold, pseudo script, serifs, computer zero (Ø) and <u>underlining</u> must not be used. • Height: 2mm min, 7mm max, Width: 7mm max • Ratio of lower case height (b) to 'UPPER CASE' height (a) of between 2:3 and 3:4; and ratio of width (c) to height (a) of approximately 2:3. (See Figure 7) • Character quality must be complete, clear and of high resolution, with individual stroke having a uniform thickness of 8% - 16% of the height of the character. • There must be clear vertical gaps of at least 0.25mm between extremities of adjacent characters¹⁷. 	M M M M H
	<p>Print Quality</p> <ul style="list-style-type: none"> • The Delivery Address block MUST be printed using a dark colour (preferably black) on a light background. • The address content must adhere to the substrate and must not break up or wear during processing. • The contrast ratio for addresses printed on envelopes must be at least 50 % (window inserts 55%)^{18 19}. • The minimum requirement for background reflectance is 35% and minimum reflective difference of a minimum of 30% is required^{18 19}. • Print quality must be such that characters are not blurred, smudged, deformed, or incomplete. • There must be no splashing or ink spatter around the characters. • We recommend that you regularly check the quality of your print output for clarity. 	M M M M M M H
	<p>Location</p> <ul style="list-style-type: none"> • The Delivery Address block must be positioned on the front of the Letter below and to the left of the Indicia (see Figure 9 to Figure 11). • The PAF delivery address must be visible at all times. • The Delivery Address block must not be printed in the Indicia Area, or in the border area - 40mm top, 15mm left and right, and 18mm at the bottom • Where address labels are used, a minimum clear zone of 2mm on the label and 3mm on the envelope must be met. • The Delivery Address block must not be printed over the edge of the envelope flap. • The Delivery Address block must not encroach into the tag codemark clear zone. (See Codemark Clear Zones). • A clear zone of at least 5mm is required around the Delivery Address block (including the MDI). No text, patterning, or graphics must be printed within the Delivery Address block and its clear zones. (See Figure 8) • The last line of the Delivery Address block must always be at least 50mm from the top edge of the Letter. 	M M M M M M H H
	<p>Window Clear Zone</p> <p>Where window envelopes are used, a minimum clear zone of 2mm within the window and 3mm on the envelope should be met. The clear zone requirements apply always, including after the Letter is tapped on all four edges to induce maximum insert movement. i.e. The whole of the PAF Delivery Address should always be visible.</p>	H

¹⁷ If you are using proportionally spaced text, please ensure you keep spacing of at least +0.75, as this significantly improves the rate at which addresses can be read.

¹⁸ Light source wavelength used for these measurements is in the red region.

¹⁹ Mail pieces not meeting this requirement will appear as block of dark grey or even black, making it impossible to identify the address on the mail item.

Category		Specification Requirement	MHL
Return Address	Return Address Example	Return Address Royal Mail Rowland Hill House Swindon SN3 5TQ	M
	General	<ul style="list-style-type: none"> Only one return address must be printed on the Letter. Nothing else that looks like a return address must be printed on the Letter. It is not permitted to have both English and Welsh addresses on an item. The premise to posttown address elements must follow the core PAF address content and a single language must be used for each of these address lines. i.e. This could be in English or Welsh (e.g. Swansea or Abertawe) subject to the PAF address summary definition or in Welsh where an alternative is specified in PAF. Customers cannot create bi-lingual English / Welsh addresses if they are not in PAF. 	M M M
	Content	<ul style="list-style-type: none"> The return address must be prefixed with the words Return Address. The return address must be a PAF address that includes a premise element, thoroughfare element, locality, and the postcode. The addressee information, for example the company name, must be included on the second line of the return address block. The number of characters per line of the return address block should not exceed 64 characters (including spaces). No counties or UK countries should be included within the return address block. 	M M M L L
	Structure & Format	<ul style="list-style-type: none"> The return address must be provided as a 'block' of left justified text with uniform line spacing (1-4mm) and with no blank lines. The return address must be printed in 'Title Case', with the exception of the Postcode that must always be printed in 'UPPER CASE'. Each individual element of the address must be on a separate line. Note that the house number and the street must always be printed on the same line. The Postcode must be printed on the last line of the address or may be printed on the same line as the posttown (with a gap of 1-2 spaces). Only punctuation that is included with the PAF address must be included, or alternatively all punctuation may be removed. The word spacing must be no more than 5mm. The return address block skew must be no more than plus or minus 5°. 	M M M M M M M
	Fonts	<ul style="list-style-type: none"> Letter Gothic or Lucida Console font must be used for the whole return address and this must be printed using: <ul style="list-style-type: none"> 10-12pt font (12pt preferred) Normal character spacing Pitch set at 10-12 characters per inch. 	M
	Print Quality	The same specifications which apply to the Delivery Address must be met.	M
	Location	<p>The return address must be either located:</p> <ul style="list-style-type: none"> On the back of the Letter and centred within the top 40mm. This is the preferred location as it avoids any confusion with the Delivery Address block (See Figure 12). On the front of the Letter within the top 40mm, and to the left of the indicia (with no element closer than 75mm to the right edge) (See Figure 13), and no closer than 12mm to the Delivery Address. 	M
	Clear Zones	<ul style="list-style-type: none"> No text, patterning, or graphics must be printed within the return address. There must be a clear zone of 5mm around the return address. 	M M

1.3.1 OCR Letters – Addressing Figures

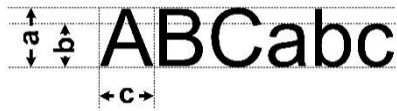


Figure 7 – Letter Font Ratio

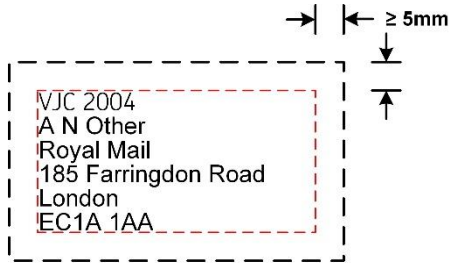


Figure 8 – Delivery Address block (Not to Scale)

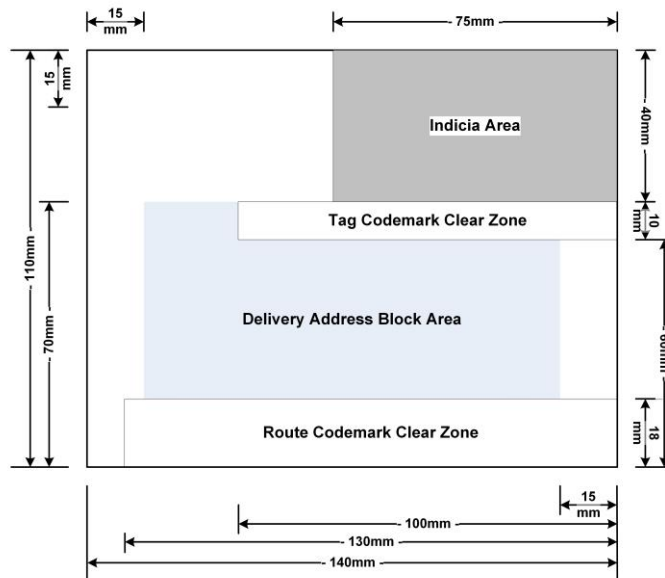


Figure 9 – Letter Clear Zones – Minimum Size (Not to Scale)

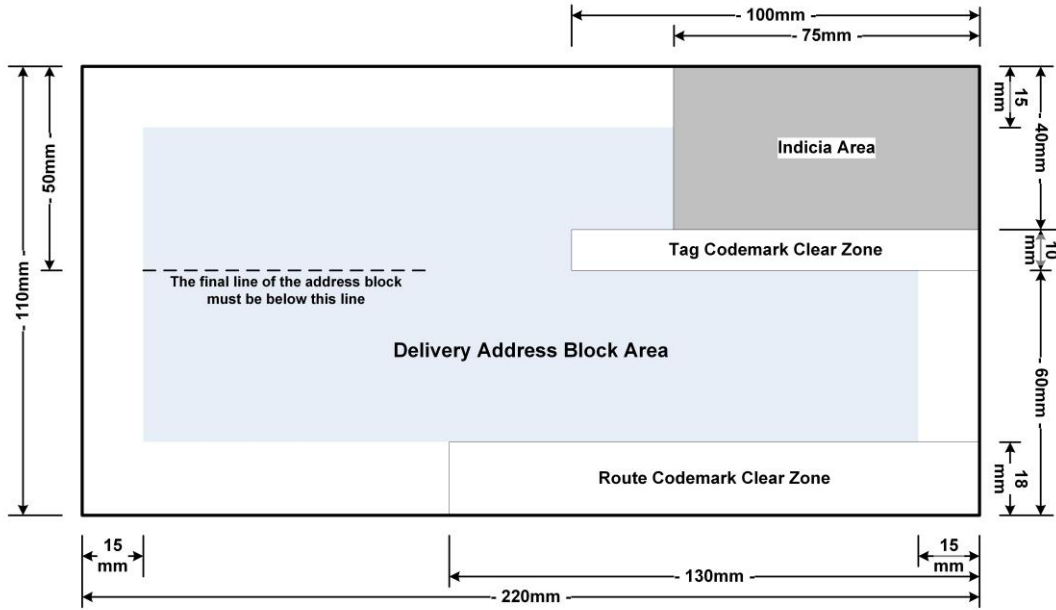


Figure 10 - Letter Clear Zones - DL Envelope (Not to Scale)

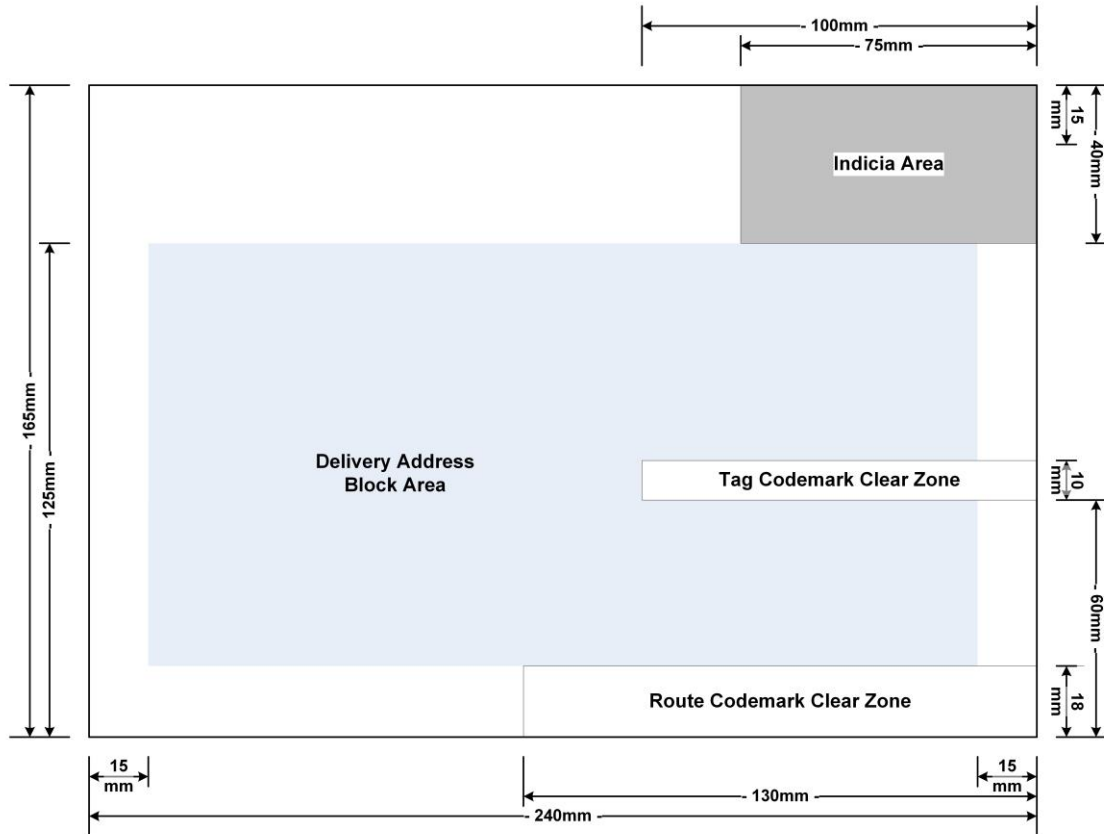


Figure 11 - Letter Clear Zones - Maximum Landscape (Not to Scale)

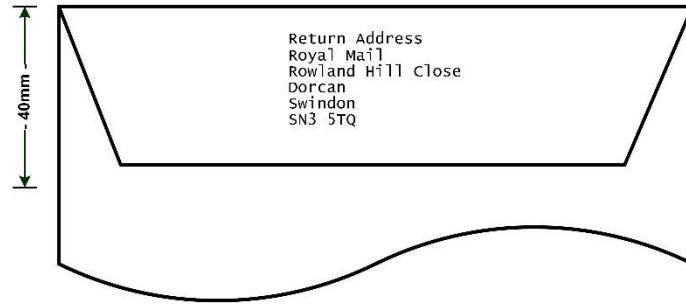


Figure 12 – Letter Return Address Preferred – Back (Not to Scale)

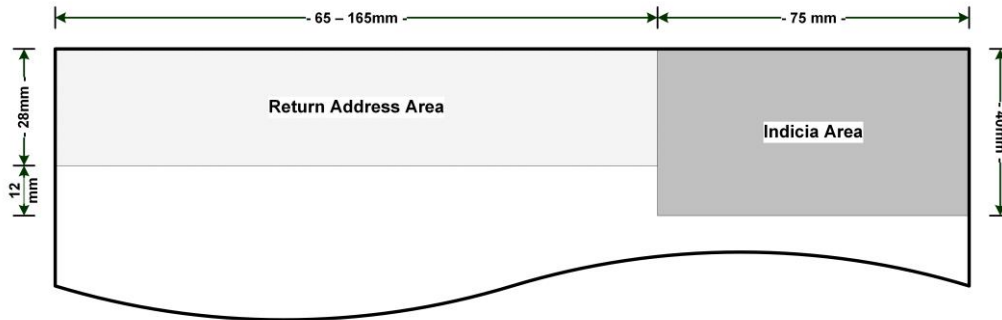


Figure 13 – Letter Return Address – Front Landscape Example (Not to Scale)

1.4 OCR Letters – Codemark Clear Zones

These clear zones relate to the typical location of the orange barcodes that are applied to Letters by Royal Mail to facilitate automated Letter processing.

Category	Specification Requirement	MHL
Tag Codemark	This is located 60mm up from the bottom right corner of the Letter, and covers an area 10mm high, and 100mm long (from the right edge of the Letter). This area must be free of any window material, text and graphics (see Figure 9 to Figure 11).	M
Route Codemark	This is in the bottom right corner of the Letter and covers an area 18mm high (from the bottom edge of the Letter), and 130mm long (from the right edge of the Letter). This area must be free of any window material, text and graphics (see Figure 9 to Figure 11).	M

1.5 Other OCR Letter Requirements

1.5.1 One Piece & Wrap Letter Mailers

For the purposes of this document, a One-Piece 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.’*

This section defines the specific construction characteristics of One-Piece Mailers (including the machineable postcard that is in effect a permanently sealed one-piece mailer). Other physical requirements together with Indicia and addressing requirements remain as standard.

Advertising Paper Wrap Letter (that provide a one-piece alternative to open or poly-wrapped large letters that are no more than 248mm long) designs must not be used for OCR products.

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Purpose	This option covers the multi-fold mailer, together with designs that provide a one-piece alternative to the traditional envelope.	This mailer is specifically designed to open out easily into a full-page feature that is not damaged by fibre tear because of gluing.	This mailer is specifically designed to provide a pocket in which a small booklet can be inserted.	This mailer is specifically designed to provide a postcard of 2/3 ply ²⁰ . The 3-Ply element provides a reference edge for the mailer, and the varied thickness ensures the items do not stick together. (M) The card must be produced from a sheet of paper that is cut, folded twice and adhered on all sides. This shall provide a rectangular finished mailpiece in landscape orientation.
Inserts	Only Paper inserts are permitted (H ²¹)	(M) No Insert is permitted	<ul style="list-style-type: none"> • (M) The booklet must be paper only. • (M) The booklet must rest on the reference edge (the longest edge opposite the Indicia) • (M) The booklet must be affixed to the inside the mailer to prevent movement during processing. The booklet insert should be no more than 85mm x 130mm in size and the mailer should be no more than 2mm thick (H ²²)	No Insert is permitted

²⁰ The bottom of the finished mailpiece must have a 3-Ply paper thickness, whilst the top must have a 2-Ply thickness

²¹ Increasing the weight of a paper insert e.g. a booklet is likely to impact and reduce the robustness of the mail piece. Regardless of the insert weight items must be sealed securely to ensure the mailing item can contain all inserts during processing by Royal Mail.

²² These requirements relate to the designs that have been tested.

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Shape	(M) Rectangular or Square		(M) Rectangular only	(M) As specified below
Multiple Folds	(M) The long edges of the finished mailpiece must be folds, and the short edges and flap must be sealed.	Maximum 2 folds (H 22)	Folded three times to produce a pocket as follows (H 22) :- Fold 1 - 70mm from bottom edge. Fold 2 - 215mm from bottom. Fold 3 - 360mm from bottom	(M) The bottom of the finished mailpiece must have a 3-Ply paper thickness amounts to 45% of the height of the shorter edge of the finished mailpiece, whilst the top amounts to 55% of the height of the shorter edge of the finished mailpiece. (a manufacturing tolerance of plus or minus 2mm is permitted). Two physical design options are available :- 1. The 3-ply paper must be cut finished so all three layers form a single bottom (reference) edge. i.e. the edge consists of 3 layers of paper and 2 layers of adhesive. The finished cut edge must look as if it is a single edge. (See Figure 20) 2. The paper must be folded such that the first fold creates an internal flap. The second fold must form another flap that covers the internal flap and ends 1mm short of the bottom (reference) edge. (See Figure 21).
Reference Edge ²³	<ul style="list-style-type: none"> • (M) The reference must be a folded edge on the mailpiece • (M) For landscape the folded reference edge is the edge beneath the address. • (M) For square mailers, the reference edge is the edge beneath the address. 		<ul style="list-style-type: none"> • (M) Must be a folded edge. • (M) For landscape this is the longest edge beneath the address. 	
Mailer Dimensions	(M) Minimum and maximum mailpiece dimensions.		165mm plus or minus 5mm x 145mm plus or minus 5mm. (H 22)	(M) Minimum and maximum mailpiece dimensions.
Mailer Thickness	(M) Minimum and maximum mailpiece thickness		2mm including insert. (H 24)	(M) Minimum and maximum mailpiece thickness.

²³ The reference edge is a fold on a specific edge of the Letter, which enables it to be processed through the machines efficiently.

²⁴ Inconsistent thickness causes mechanical handling issues.

Physical Reqs	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Mailer Max weight	(M) Minimum and maximum mailpiece weight.		No more than 20g (H 22)	(M) Minimum & maximum mailpiece weight
Paper Weight	(M) Minimum 100gsm	(M) 150gsm - 190gsm	(M) Minimum 115gsm	(M) 120gsm - 150gsm (150gsm recommended)
Paper Thickness	Not applicable	0.13mm - 0.175mm (H 22)	Not applicable	(M) 2-Ply element minimum 0.18mm (M) 3-Ply element minimum 0.27mm
Sealing Flaps	<ul style="list-style-type: none"> Flap should run parallel to the reference edge and may be on the front or back of the mailer. (H 22) The minimum height for a flap 25mm. (H 22) The flap must be at least 40mm from the bottom of the mailpiece. (H 22) 	Not applicable	Fold 3 forms a sealing flap 35mm deep. (H 22)	Not applicable
Sealing	<p>With Inserts (M) All unfolded sides (including the flap) must be glued with a continuous seal.</p> <p>No Inserts (M) All unfolded sides must be glued using a spot seal or a continuous seal.</p>	(M) All unfolded sides must be glued using a spot or continuous seal	(M) All unfolded sides must be glued with a continuous seal .	
Security / Presentation	<ul style="list-style-type: none"> (M) Items must be securely sealed when presented to Royal Mail (M) The mailer must be flat and must not be curled. (M) Mailpieces must not be stuck or caught together. 			
Glue	<ul style="list-style-type: none"> (M) The glue must not be brittle or easily broken. (M) The glue must not seep to the outside of the mailpiece. (M) The cure time for the glue must be sufficient to ensure that it has fully cured prior to being presented to Royal Mail. 			
Peel Adhesion	(M) The peel adhesion strength of glue must be a minimum of 0.4N or paper fibres must be seen to tear if the seal is peeled apart.	<ul style="list-style-type: none"> (M) The peel adhesion strength of glue must be a minimum of 0.2N on the sides. (M) The peel adhesion strength of glue must be a minimum 0.25N on the long edge. 	<ul style="list-style-type: none"> (M) The peel adhesion strength of glue used for the side seals must be a minimum of 0.25N or paper fibres must be seen to tear if the seal is peeled apart. (M) The peel adhesion strength of the flap must be minimum 0.2N or paper fibres must be seen to tear if the seal is peeled apart. 	(M) The peel adhesion strength of glue must be a minimum of 0.4N or paper fibres must be seen to tear if the seal is peeled apart.

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Glue Thickness	No more than 80 microns thick (H ²⁵)			
Spot Gluing	<ul style="list-style-type: none"> • Glue spots may be circular or elliptical. • Distance between two closest edges of glue spots should be no more than 10mm (H ²²) • Size of spots should be at least 5mm in diameter / length. (H ²²) • Maximum distance from edge of mailpiece should be 5mm, plus or minus 2mm (H ²²) (See Figure 14)	<ul style="list-style-type: none"> • Glue spots may be circular or elliptical. • Side spots should be at least 11mm in diameter and must be no more than 25mm apart. (H ²²) • Long edge spots be at least 15mm in diameter / length and should be no more than 45mm apart. (H ²²) • Maximum distance from edge of mailpiece should be 5mm, plus or minus 2mm (H ²²) (See Figure 16)	Not applicable	
Continuous Gluing (glue line)	A minimum 4mm wide sealed to within 3mm of the edge (H ²²) (See Figure 15)	Not applicable	<ul style="list-style-type: none"> • Continuous 10mm band of adhesive to the side edges of the mailer. (H ²²) • Long edge of flap sealed with 6mm-9mm wide line of adhesive or 2 lines of 2mm-3mm wide adhesive that are 2mm-3mm apart. (H ²²) • (M) The adhesive must be no more than 5mm from the edge of the flap. • The sides of the flap should be sealed to the edge of the mailpiece with 6mm-9mm wide line of adhesive or 2 lines of 2mm-3mm wide adhesive that are 2mm-3mm apart. (H ²²) (See Figure 18 & Figure 19)	(M) A permanent and continuous adhesive seal of 15mm width to the side edges of the mailer is required on both open sides of the mailpiece and on the internal flap.
Finish	<ul style="list-style-type: none"> • Matt finish is preferred. (H ²⁶) • Digitally Printed Mail – See Note below 			Finish – Matt or Silk (Matt preferred) (H ²⁶)
Clear Zone inside the mailpiece	10mm clear zone around the inside perimeter clear of print to ensure that the adhesive properties of the glue are not impaired. (H ²²) (See Figure 17)	Not applicable		

²⁵ Welds greater than this thickness may cause mechanical handling issues.

²⁶ Silk and gloss finished mailpiece are more likely to stick together (i.e. higher double fed mailpieces and missorts).

1.5.1.1 One Piece & Wrap Letter Mailer - Figures

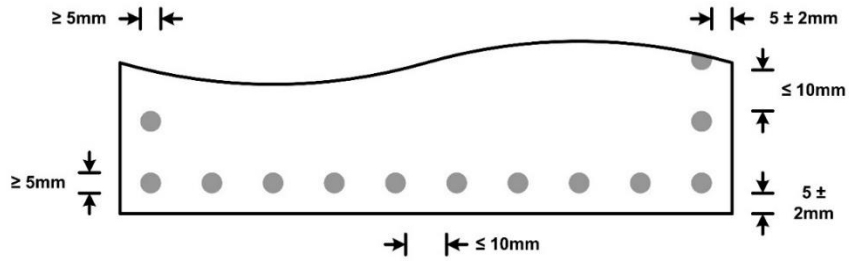


Figure 14 - Standard One-Piece Letter Mailer - Spot Weld Requirements (Not to Scale)



Figure 15 - Standard One-Piece Letter Mailer - Glue Line Requirements (Not to Scale)

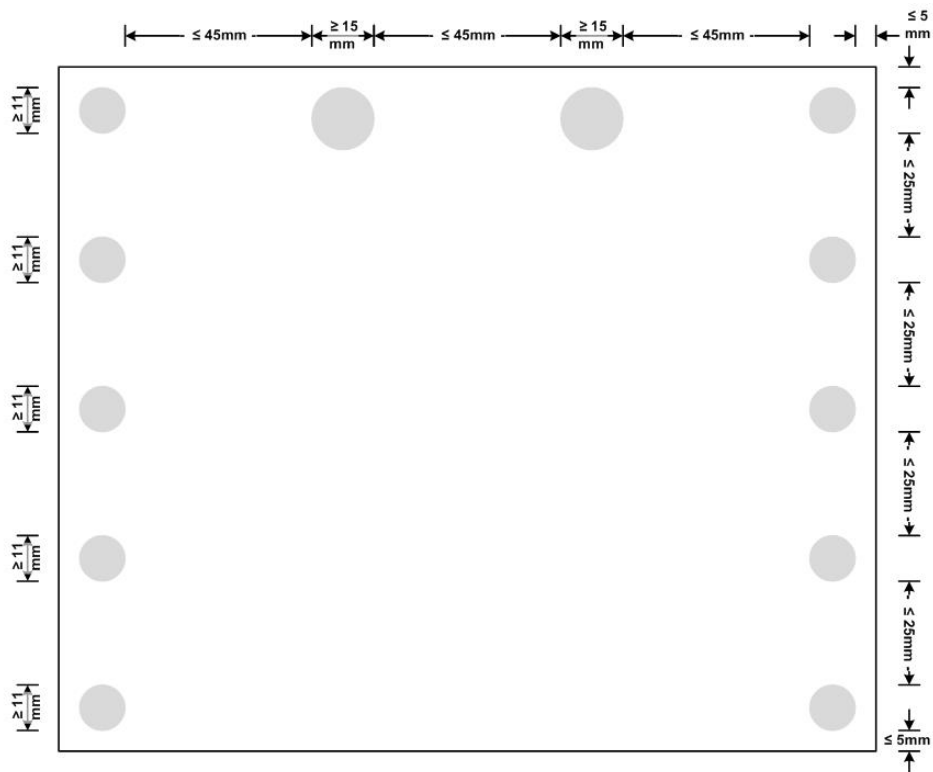


Figure 16 - Feature Letter Mailer (Not to Scale)

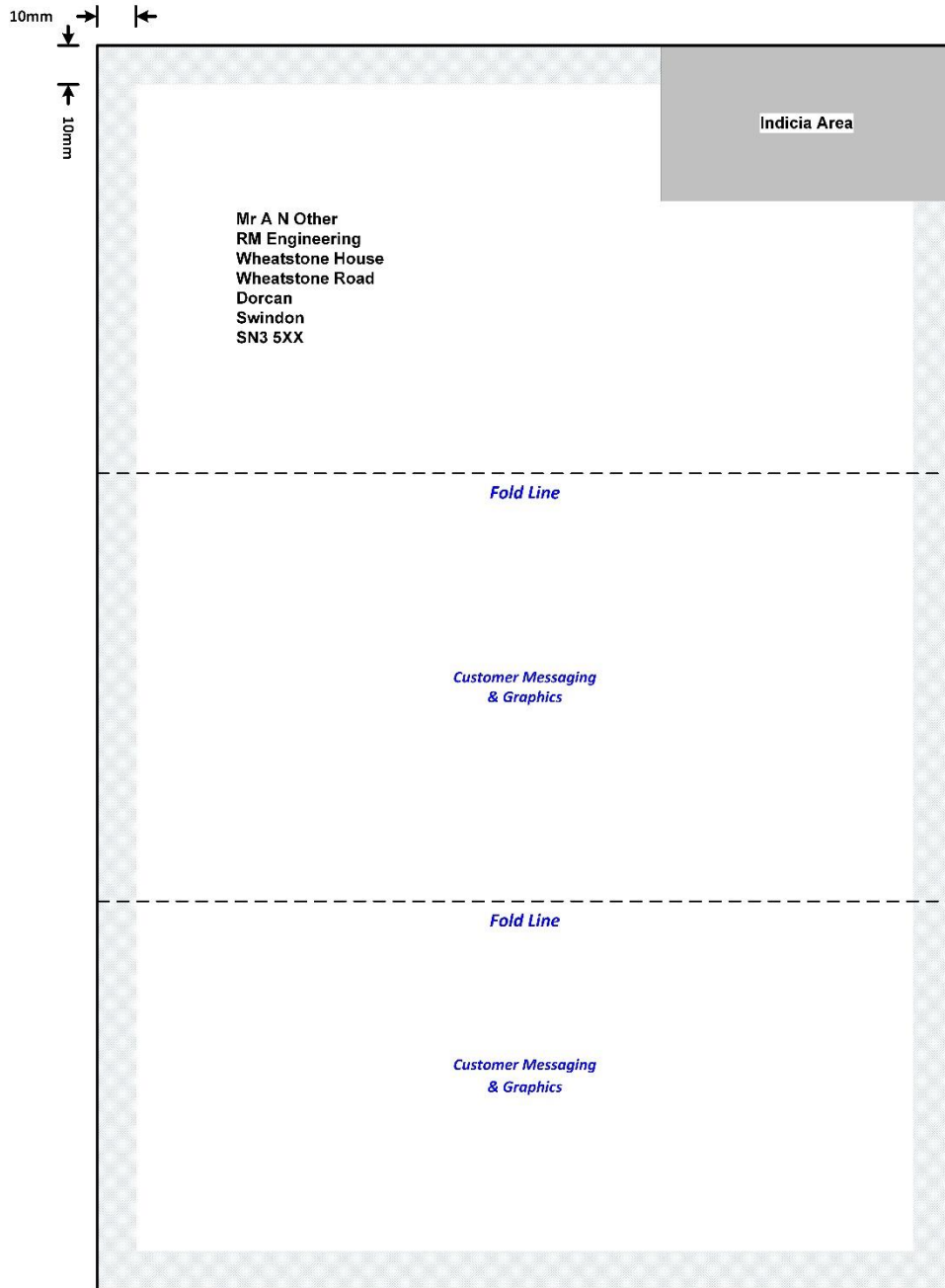


Figure 17 – Standard One-Piece Letter Mailer – Internal Perimeter Clear Zone (Not to Scale)

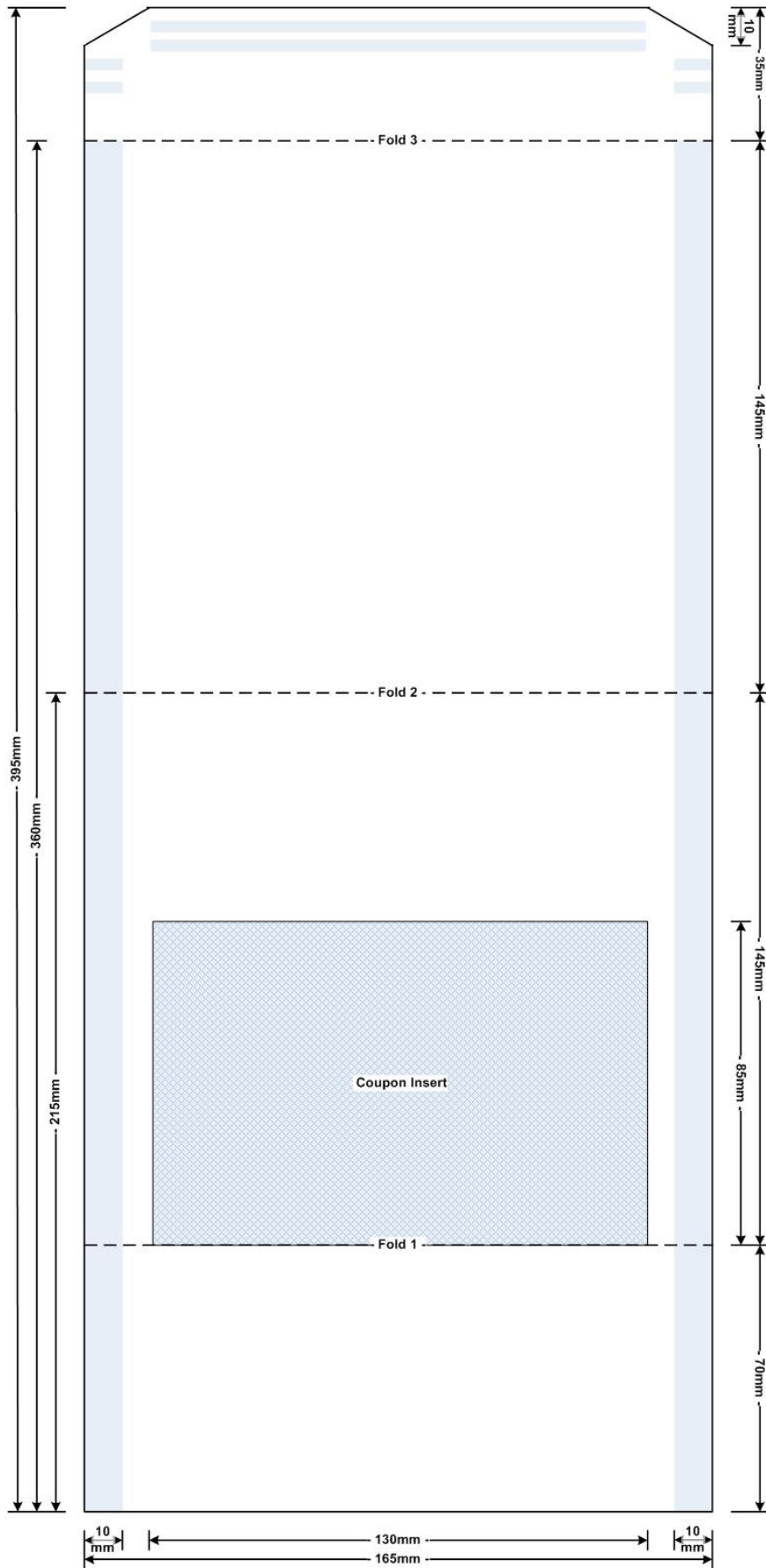


Figure 18 - Coupon One-Piece Letter Mailer - Dimensions (Not to Scale)

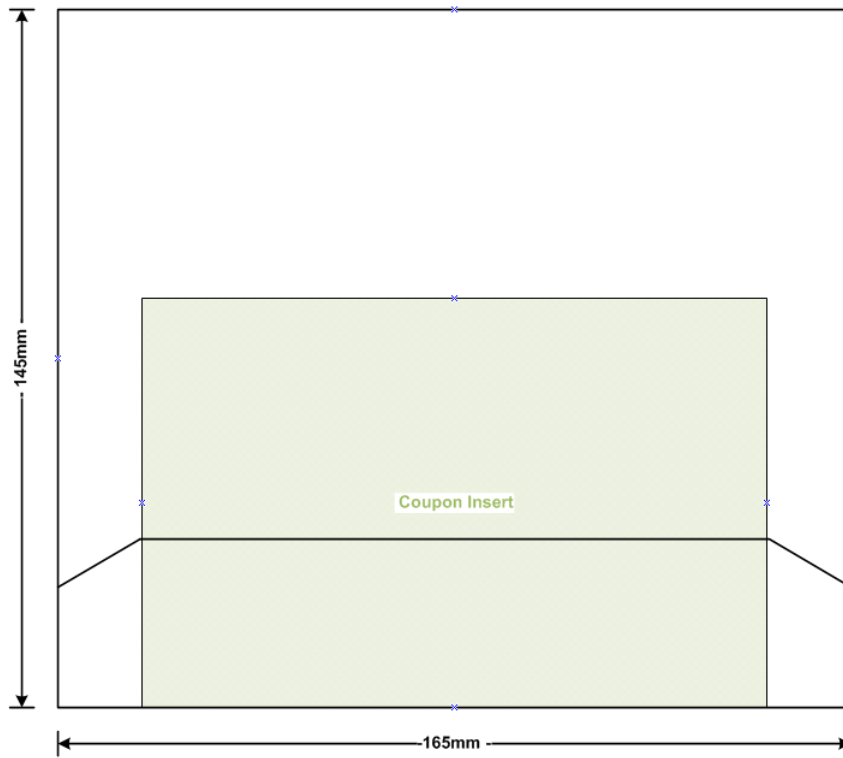


Figure 19 – Coupon One-Piece Letter Mailer – Finished (Not to Scale)

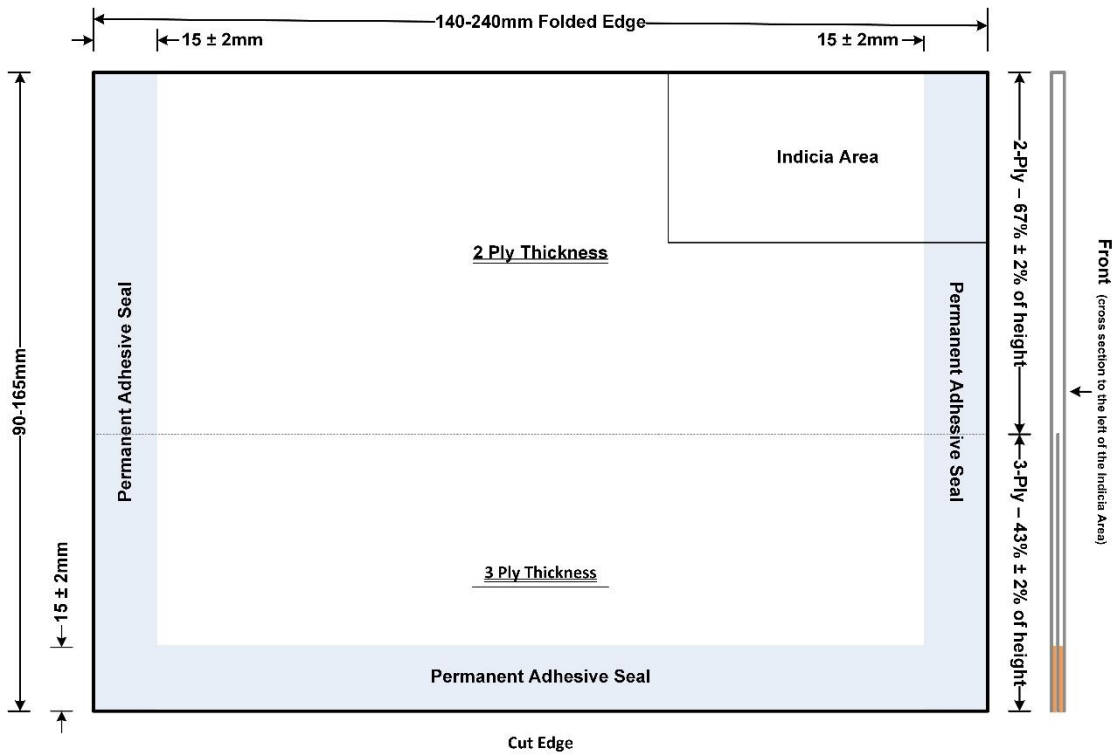


Figure 20 – Machineable Postcard – Option 1 (Not to Scale)

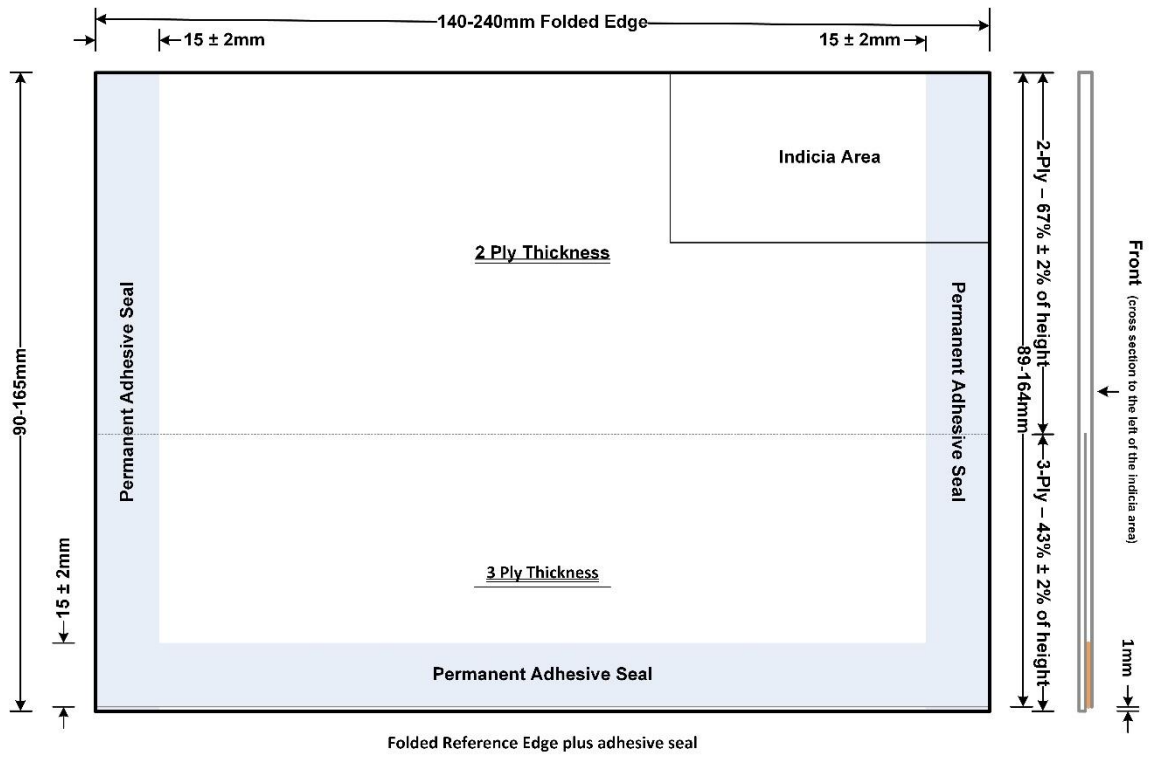



Figure 21 - Machineable Postcard - Option 2 (Not to Scale)

1.5.2 Perforated Letter Mailers

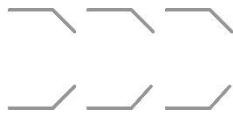
For the purposes of this document, a One-Piece Mailer is defined as:- *'A Letter that is designed to be wholly or partly opened by tearing off a perforated strip.'*

This section defines the specific construction characteristics of Perforated Letter Mailers. These include roulette and zip tie designs, together with the pressure seal mailer. Other physical requirements together with Indicia and addressing requirements remain as standard.

1.5.2.1 Roulette Perforations

Category		Specification Requirement	MHL	
Roulette Perforations	Definition	These perforations consist of a line of cuts (holes) and paper bridges in the Letter. Access to the Letter content is gained by tearing the Letter along the line of perforations. 		
	Orientation	The mailpiece must be in landscape orientation (but not square).	M	
	Design	<ul style="list-style-type: none"> The perforations must be located on both 'short' sides of the mailpiece, and on one of the long sides of the mailpiece. i.e. only 3 sides may be perforated. The perforations must be inset from the edge of the mailpiece by 12mm, plus or minus 1mm. The 'short' side perforations must extend to each edge of the envelope. The 'long' side perforation must not extend beyond the 'short' side perforations. The indicia must not be printed over the perforations, but the Indicia clear zone may extend into the perforated border. No other colour should be visible through the perforations that are in the Tag and Route codemark Clear Zones. 		M
				M
				M
				M
				M
				M
Paper Weight	At least 100gsm.		M	
Cuts & Bridges	<ul style="list-style-type: none"> The perforations must be die cut into the mailpiece. The cut of the 'short' side perforations must be set at 1.3mm – 2mm, with a bridge of at least 0.8mm (see Figure 23). The cut of the long side perforation must be set at 0.5mm – 1.4mm, with a bridge of at least 0.4mm (see Figure 23). The cuts must be rectangular in shape and have a width of no more than 0.1mm. Each cut must be of uniform size and each bridge must be of uniform size. 		M	
			M	
			M	
			M	
			M	
Sealing	<ul style="list-style-type: none"> The perforated edges must be securely sealed all round from the perforation to the letter edges. Adhesives used must be dry and must not leak onto the open surface of the Letter. The glue must not run out onto the outside of the Letter or produce protruding mounds on the Letter. Letters must not be stuck or caught together. The glue must be fully cured prior to presentation of the mailing to Royal Mail. The peak peel adhesion strength of the glue must be at least 4.5N, and fibre tear must be exhibited on separation. 		M	
			M	
			M	
			M	
			M	

1.5.2.2 Zip Tie Perforations

Category		Specification Requirement	MHL
Zip Tie Perforations	Definition	<p>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.</p> 	
	Orientation	The mailpiece must be in landscape orientation (square letters are not acceptable).	M
	Design	<ul style="list-style-type: none"> The zip tie must always be placed on the back of the mailpiece. 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 24); the orientation and 'Tear' directional requirements relative to position of the Indicia on the front of the Letter being illustrated). The zip tie must be located on a flap that is at least 40mm wide (see Figure 25). The zip tie must be positioned at least 9mm from the edge of the flap (see Figure 25). 	M M M M
	Paper Weight	At least 150 gsm.	M
	Cuts & Bridges	<ul style="list-style-type: none"> Only one zip tie is permitted on each mailpiece. The zip tie must be die cut into the mailpiece. The dimensional requirements for the cut of the zip tie are provided in Figure 26. The cuts must be rectangular and have a width of no more than 0.1mm. All cuts and bridges must be of uniform size. 	M M M M M
	Sealing	<ul style="list-style-type: none"> Envelopes must be securely sealed on the front, back and all edges. The perforated edges must be securely sealed all round from the perforation to the letter edges. The glue must not run out onto the outside of the Letter or produce protruding mounds on the Letter. Adhesives used must be dry and must not leak onto the open surface of the Letter. Letters must not be stuck or caught together. The glue must be fully cured prior to presentation of the mailing to Royal Mail. The sealing adhesive(s) must be no more than 80 microns thick. The peak peel adhesion strength of the glue must be at least 4.5N, and fibre tear must be exhibited on separation. 	M M M M M M M

1.5.2.3 Pressure Seal Perforations

Category		Specification Requirement	MHL
Pressure Seal Envelope	Definition	This form of Letter has roulette perforations through all layers in a perforated strip on the short sides of the Letter, and a roulette perforation tear off strip on the back. i.e. The short side perforations go through the 3 layers on DL size Letters and through the 2 layers on C5 size Letters. It is produced from a single sheet of paper and designed to be opened by removing the short edge perforated strips first; then removing the tear off strip on the reverse of the mailer to access the content.	
	Orientation	The Letter must be in landscape orientation (square letters are not acceptable).	M
	Design	<ul style="list-style-type: none"> The perforations must be located on both 'short' sides of the Letter (i.e. the perforated strip), with the roulette tear strip being on the back of the Letter. The long edge furthest from the indicia (bottom side) must be a fold. Additional inserts are not permitted. The perforated strip must be inset from the sides of the Letter by 12mm, plus or minus 1mm (see Figure 27 and Figure 28). The perforated strip must extend to each edge of the envelope (see Figure 27 and Figure 28). The indicia must not be printed over the perforations, but the Indicia clear zone may extend into the perforated border. Only one roulette tear strip is permitted on each Letter. The roulette tear strip must be at least 10mm from the long edge of the Letter and must be at least 10mm wide. The roulette tear strip may extend into 'short' side perforations. 	M
			M
			M
			M
			M
			M
			M
	Paper Weight	<ul style="list-style-type: none"> 3-ply DL design - at least 100gsm, 2-ply C5 design - at least 150gsm. 	M
Short Edge Roulette Perforations	<ul style="list-style-type: none"> The perforations must be die cut into the Letter. The cut of the 'short' side perforations must be set at 1.3 – 2mm, with a bridge of at least 0.8mm (see Figure 23). The cuts must be rectangular and have a width of no more than 0.1mm. Each cut must be of uniform size and each bridge must be of uniform size. 	M	
		M	
		M	
		M	
Long Edge Roulette Tear Off Strip	<ul style="list-style-type: none"> The perforations must be die cut into the Letter. The cut of the 'Tear Strip' perforations must up to 3.3mm, with a bridge of at least 0.6 mm (see Figure 23). The cuts must be rectangular and have a width of no more than 0.1mm. Each cut must be of uniform size and each bridge must be of uniform size. 	M	
		M	
		M	
		M	
Sealing	<ul style="list-style-type: none"> Envelopes must be securely sealed on the front, back and all edges. The perforated edges must be securely sealed all round from the perforation to the letter edges. Where the roulette tear strip may extend into 'short' side Perforations, it must be securely sealed ²⁷, and the sealed edge between the roulette tear strip and the edge of the Letter must be securely sealed along its entire length (including the part that extends into the perforated area). The glue must not run out onto the outside of the Letter or produce protruding mounds on the Letter. Adhesives used must be dry and must not leak onto the open surface of the Letter. Letters must not be stuck or caught together. The glue must be fully cured prior to presentation of the mailing to Royal Mail. The sealing adhesive(s) must be no more than 80 microns thick. The peak peel adhesion strength of the glue must be at least 4.5N, and fibre tear must be exhibited on separation. 	M	
		M	
		M	
		M	
		M	
		M	
		M	

²⁷ This ensures that the Perforated Strips are totally sealed long their length.

1.5.2.4 Perforated Letter Mailers – Figures

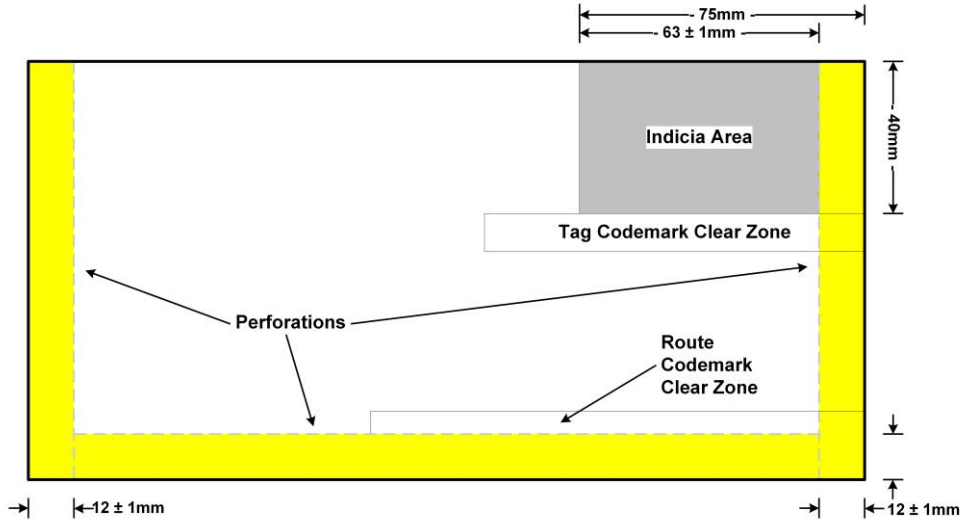


Figure 22 - Roulette Perforation Landscape Letter – Bottom Perforation (Not to Scale)

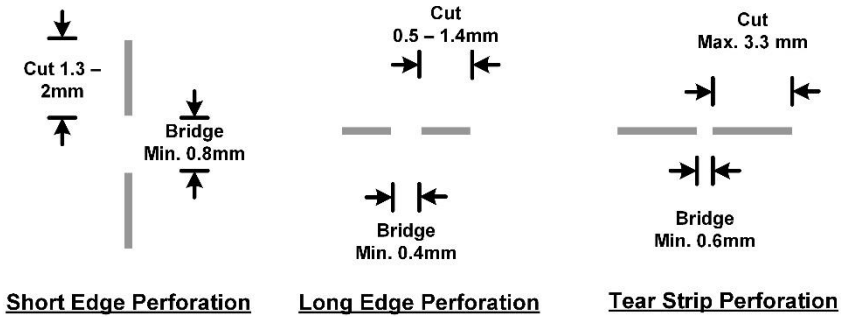


Figure 23 - Roulette Perforation Dimensions (Not to Scale)

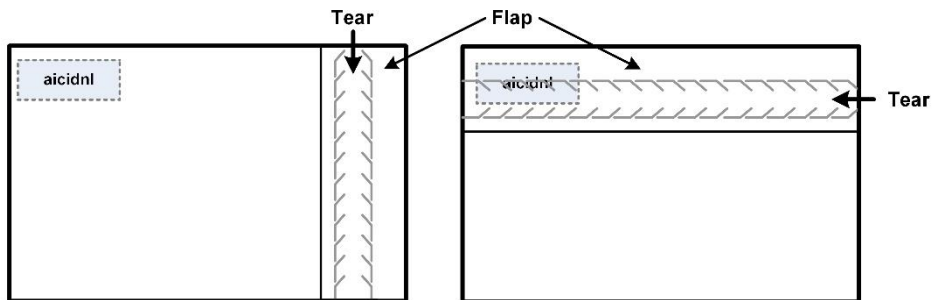


Figure 24 - Zip Tie Letter Orientation (back view) – Landscape Mail (Not to Scale)

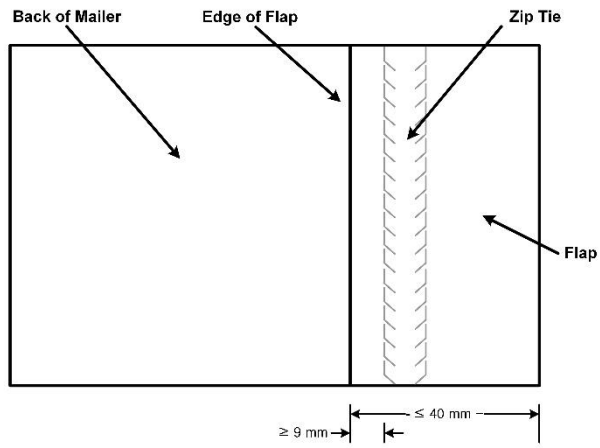


Figure 25 - Zip tie Letter & Envelope Flap (Not to Scale)

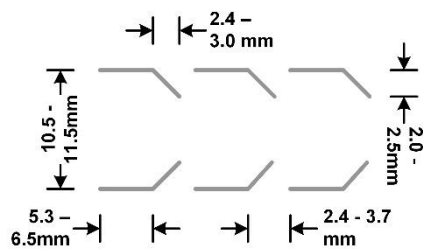


Figure 26 - Zip tie Dimensions (Not to Scale)

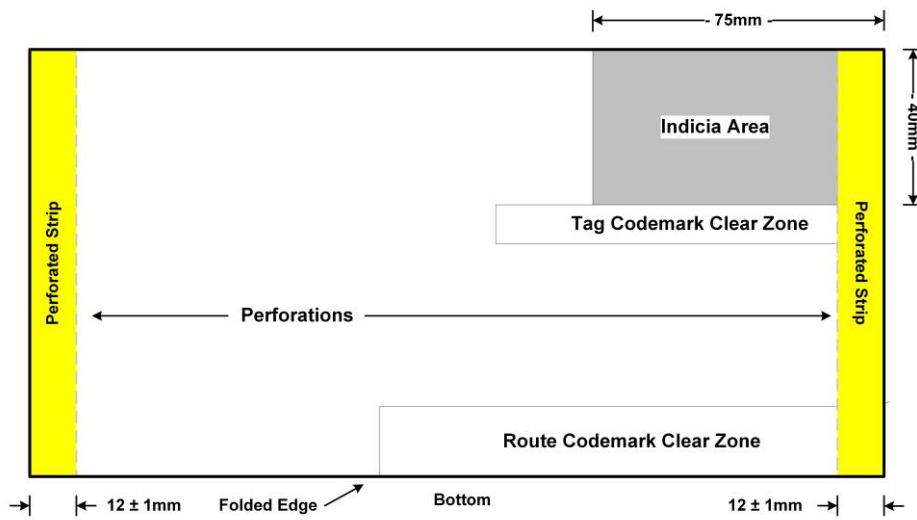


Figure 27 - Pressure Seal Letter Envelope - Front of Letter Perforations (Not to Scale)

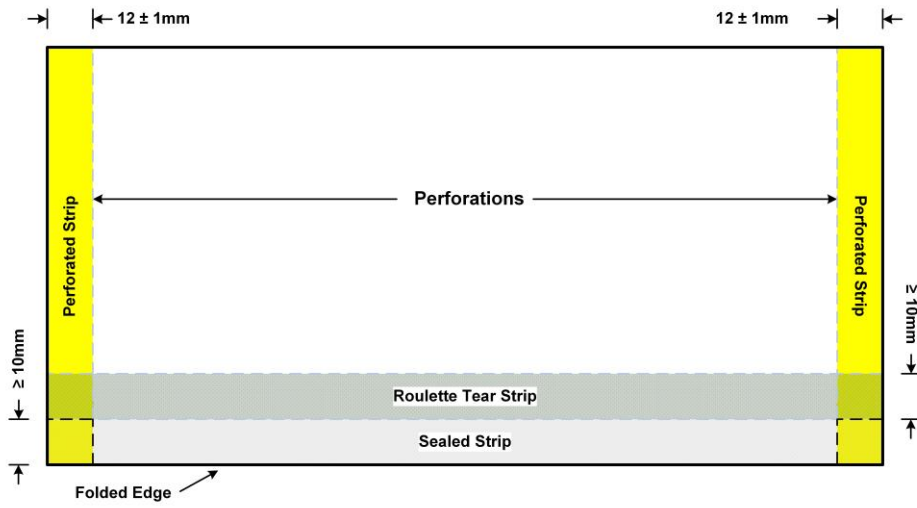


Figure 28 – Pressure Seal Letter Envelope - Back of Letter (Not to Scale)

1.5.3 Tabbed Letter Mailers

Tabbed mailers are not permitted for OCR Letter products.

2. OCR Large Letters – Specification Requirements

2.1 OCR Large Letters – Physical

2.1.1 OCR Large Letters – Physical – Generic

These requirements apply to all Large Letters unless stated otherwise.

Category		Specification Requirement	MHL
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)	<u>Rectangular</u> Minimum – 95mm x 145mm, Maximum – 245mm x 345mm <u>Square</u> Minimum – 145mm x 145mm, Maximum – 245mm x 245mm	M
	Thickness	Minimum – 0.5mm, Maximum – 10mm	M
	Weight	Minimum – 10g, Maximum – 750g	M
	Content / Inserts	<ul style="list-style-type: none"> 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 ²⁸. 	M
			L ²⁹
	Spatial Distortion	<ul style="list-style-type: none"> 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
	Flexibility	<p>The acceptable rigidity or stiffness for a Large Letter must be at least 8N.mm ³⁰. This is determined using the test below (see Figure 30) :</p> <ul style="list-style-type: none"> 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. 	M
	Separation	<ul style="list-style-type: none"> 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 33). 	M
Do Not Redirect	Not permitted for Large Letters		
Design	Logos & Advertising	<ul style="list-style-type: none"> 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. 	H ³¹
		<ul style="list-style-type: none"> Slogans where the company name contains the words 'Return', 'Address' and 'Undelivered' should be avoided 	H ³²
		<ul style="list-style-type: none"> Logos and advertising may be located within the indicia area provided that the clear zone required for the indicia is maintained. 	H ³³

2.1.2 OCR Large Letters – Physical – Paper Envelopes (excl. Wrap)

Category		Specification Requirement	M/R
Paper Envelope Construction & Flaps	Material	<ul style="list-style-type: none"> Envelopes must be made from paper only and have NO open apertures. 	M
		<ul style="list-style-type: none"> Perforations (including Zip Tie perforations) must not be used on Large Letters. 	M
	Flaps	<ul style="list-style-type: none"> Adhesives used must be dry and must not leak onto the open surface of the Large Letter. 	M
		<ul style="list-style-type: none"> Large Letters must not be stuck or caught together. 	M
		<ul style="list-style-type: none"> Envelopes must be securely sealed on the front, back, and all edges. 	M

²⁸ 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.

²⁹ This enables effective presentation to the machine and subsequent processing.

³⁰ A degree of rigidity is required for machineable Large Letters. Typically, multiple unfolded paper sheet inserts are likely to be too floppy, whilst inserts that are folded or have spines are more likely to have sufficient rigidity.

³¹ To reduce any potential for address reading errors.

³² This will reduce any potential for address reading errors.

³³ These may result in incorrect address determination.

	<ul style="list-style-type: none"> 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 31). The opening flap may fold to either the back or the front of the Large Letter. 	M L ³⁴		
Paper Weight	Minimum 70gsm for envelopes & minimum 200gsm for postcards	M		
Lateral Movement	Where the mailpiece is up to 2mm thick, there is no restriction on the lateral movement of the largest paper insert.			
	The lateral movement of the largest paper insert must be no more than 30mm (see Figure 29).	M		
Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H ³⁵		
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 ³⁶		
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 ³⁷		
Window	Fixing <ul style="list-style-type: none"> 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 must be visible through the window. The window film must be flat and fixed evenly across the surface area it is in contact with. The window film must be robust enough not to become creased, crumpled or otherwise deformed. 	M M M M		
		Number	There must be no more than 1 window on the front of the Large Letter.	M
		Size	The window must take up no more than 25% of the surface area.	M
		Shape	Windows must be rectangular (with rounded corners).	M
	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 36 and Figure 37).	M	
	Gloss	The maximum gloss value for the window must not exceed 150 when measured at 60°, in accordance with American Standard Test Method (ASTM) 2457.	M	
	Haze	<i>The maximum haze value for the window must not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).</i>	M	

2.1.3 OCR 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 <ul style="list-style-type: none"> Envelopes must be made from paper only and have NO open apertures. The Wrap must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals. 	M M	
		Paper Weight	Minimum 90 gsm
	Folds & Edges <ul style="list-style-type: none"> The long edges of the finished mailpiece must be folds, The short edges may be folded or sealed, and flap must be sealed. 	M M	
		Reference Edge <ul style="list-style-type: none"> The reference edge must be a folded edge on the mailpiece. For landscape the folded reference edge is the edge beneath the address. For portrait items the reference edge is the longest left edge. For square mailers, the reference edge is the edge beneath the address. 	M M M
	Flap / Long Seal <ul style="list-style-type: none"> If the flap/long seal is located on the front of the Large Letter, the Delivery Address block must not be positioned over the flap/long seal. The flap/long seal must run parallel to the reference edge and open from the bottom. The free edge of the flap/long seal must be less than 30mm deep. The preferred location for the flap/long seal is on the back of the Large Letter. 		M M M H ³⁸

³⁴ There is no preference here.

³⁵ This facilitates address and Indicia reading.

³⁶ This facilitates the application of codes and artwork to the Large Letter (i.e. the ink soaks in and does not rub off).

³⁷ This facilitates the single item sorting when mail is placed on the machine (i.e. fewer missorts).

³⁸ This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.

Category	Specification Requirement	M/R
	<ul style="list-style-type: none"> The maximum height for a flap/long seal depends on the mailpiece size but should be least 40mm from the bottom of the mailpiece. 	H ³⁸
Sealing	<ul style="list-style-type: none"> The wrap must be securely sealed on the flap/long seal and front, back, and all edges. The flap/long seal must be glued with a continuous seal. The Flap / long seal must be a minimum 2.5mm wide sealed to within 3mm-5mm of the edge. The side seals must be a minimum 4mm wide and to the edge. Adhesives used must be dry and fully cured and must not leak onto the open surface of the Large Letter. Large Letters must not be stuck or caught together. 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. 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. The glue should be no more than 80 microns thick 	M M M M M M M M H ³⁹
Peel Adhesion	<p>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.</p> <p>The adhesive used for the flap/long seal may be semi-permanent,</p>	M H ⁴⁰
Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	H ⁴¹
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 ⁴²
Zip Ties	The Zip Tie requirements are the same as those for Letters (as detailed in section 1.5.2.2).	-
Window Location	<p>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.</p> <p>The preferred location for any window that is required is on the opposite side to the Flap / Long Seal.</p>	M H ⁴³

³⁹ Glue welds greater than this thickness may cause mechanical handling issues.

⁴⁰ This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling.

⁴¹ This facilitates address and Indicia reading.

⁴² This facilitates the single item sorting when mail is placed on the machine (i.e. fewer double fed Letters and missorts).

⁴³ This avoids any weaknesses that may result from the proximity of the window to the Flap / Long Seal.

2.1.4 OCR Large Letters – Physical – Polymer Wrap

Category		Specification Requirement	MHL
Polymer Wrap Construction & Design	Material	<ul style="list-style-type: none"> Polymer Large Letters must be made from a polymer film ⁴⁴. e.g. polyethylene. 	M
		<ul style="list-style-type: none"> The film must be intact, undamaged and must not be punctured, split or torn ⁴⁵. 	M
		<ul style="list-style-type: none"> The film must be sufficiently robust to tolerate processing without tearing or splitting at the seals. 	M
		<ul style="list-style-type: none"> The single layer film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter. 	M
		<ul style="list-style-type: none"> There must only be a single layer of film covering the Delivery Address block 	M
		<ul style="list-style-type: none"> Where the Delivery Address is to be read through the film, the gloss value must not exceed 150 (American standards of testing and materials (ASTM) 2457 Measured at 60°). 	M
	<ul style="list-style-type: none"> Where the Delivery Address is to be read through the film, the haze value must not exceed 75 % (ASTM D1003-00 Procedure A (Hazemeter)). 	M	
	Design	Any text, barcode, or graphics that are printed on the wrap must adhere to the film and must not break up or wear during processing.	M
	Lateral Movement	The lateral movement of the largest paper insert must be no more than 30mm (see Figure 29).	M
	Sealing	<ul style="list-style-type: none"> The wrap must be securely sealed along its length and at each end. 	M
<ul style="list-style-type: none"> Large Letters must not be stuck or caught together. 		M	
The requirements for the Longitudinal Seal are as follows (see Figure 35).			
<ul style="list-style-type: none"> The seal for the Polymer wrap must run along the length of the Large Letter when on the front. 		M	
<ul style="list-style-type: none"> The free edge of the seal must be less than 30mm deep. 		M	
<ul style="list-style-type: none"> When located on the front of the Large Letter, the seal (and double poly film) must not be over the Delivery Address block. 		M	
<ul style="list-style-type: none"> The seal must be towards the bottom of the large letter and be no more than 90mm from the bottom edge. 	M		
<ul style="list-style-type: none"> The preferred location for the seal is on the back of the Large Letter. 	L ⁴⁶		
<ul style="list-style-type: none"> If the seal may run across the width of the mailpiece if located on the back. 	L ⁴⁶		

⁴⁴ 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.

⁴⁵ The only exception being polymers that are perforated for child safety purposes.

⁴⁶ This ensures that the Large Letter is strong enough to withstand the rigours of mechanical handling.

2.1.5 OCR Large Letters – Physical – Polymer Envelope

Category		Specification Requirement	MHL	
Poly Envelope Construction	Material	<ul style="list-style-type: none"> Polymer Large Letters must be made from a polymer film. e.g. polyethylene ⁴⁷. The film must be intact, undamaged and must not be punctured, split or torn ⁴⁵. The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals. 	M M M	
		<ul style="list-style-type: none"> The film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter. 	M	
		Lateral Movement	<ul style="list-style-type: none"> The lateral movement of the largest paper insert should be no more than 30mm (see Figure 29). 	M
		Sealing	<ul style="list-style-type: none"> The polymer envelope must be fully sealed. 	M
	<ul style="list-style-type: none"> Any glue sealed edges other than the opening flap must be sealed to the edge of the Large Letter. The glue must not run out onto the outside of the mail item or produce protruding mounds on the Large Letter. 		M M	
	<ul style="list-style-type: none"> The glue must be fully cured prior to presentation of the mailing to Royal Mail. The glue must be stronger than the polymer. The opening flap should be sealed to within 25mm of the envelope at the top and sides (see Figure 32). 		M M H Error! Bookma rk not defined.	

2.1.6 OCR Large Letters – Physical – Unwrapped (Open) Mail

Category		Specification Requirement	MHL
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 Requirement	<ul style="list-style-type: none"> The spine must always be on a long edge. The spine must be glued or stapled or stitched. (Punch & bind bindings are not permitted). Staples that are used to bind the booklet must be fully pushed through the outer cover and bent flat on the inside. All pages must be secured to the binding. Loose inserts are not permitted. Onserts must not be attached to the mail. e.g. pens or product samples. The cover of the mail must each have a paper weight of at least 50 gsm. The pages of the booklet must have a paper weight of at least 50 gsm. All pages (including the cover) must be of equal size. 	M M M M M M M

2.2 OCR 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.

⁴⁷ 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.

2.3 OCR 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	MHL
Delivery Address Location	General	The Delivery Address must not be printed in the border area (see Figure 36 and Figure 37) : <ul style="list-style-type: none"> 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 ⁴⁸ (See Figure 34)	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 must not be printed over or beneath the long flap/seal.	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 must not be printed over or beneath the longitudinal seal. <ul style="list-style-type: none"> 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: <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.	M	
	<u>Large Letters over 162mm x 229mm</u> The return address must be located either: <ul style="list-style-type: none"> 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 12), 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 13). 	M	

⁴⁸ The Large Letter Paper Wrap requirements and enable the Indicia, Delivery Address and Return Address to be printed within a 50mm high band.

2.4 OCR Large Letters – Figures

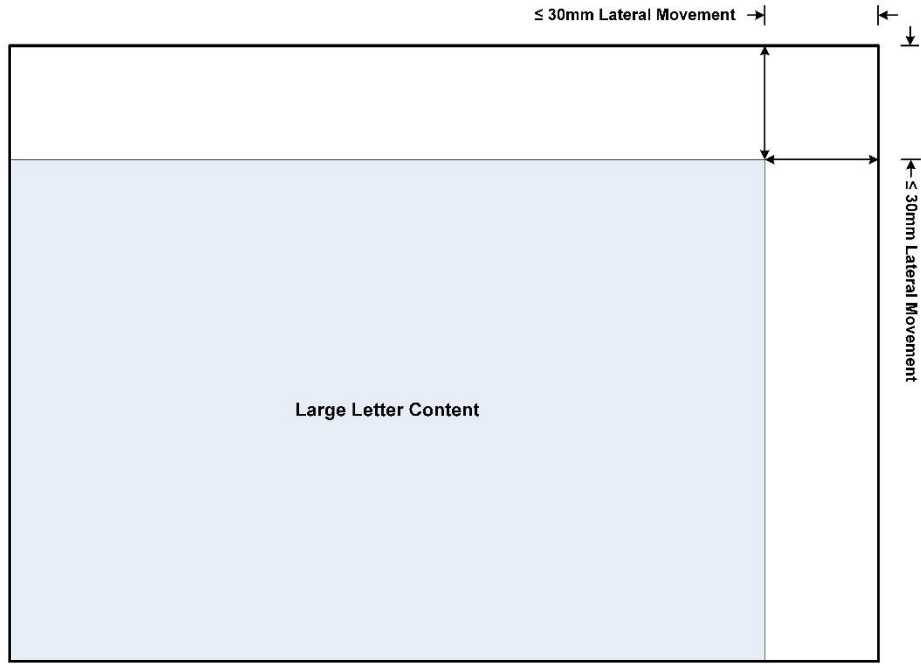


Figure 29 – Large Letter Lateral Movement (Not to Scale)

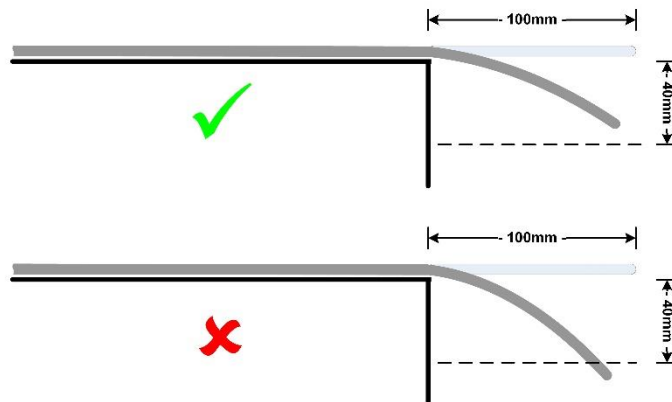


Figure 30 – Large Letter Flexibility (Not to Scale)

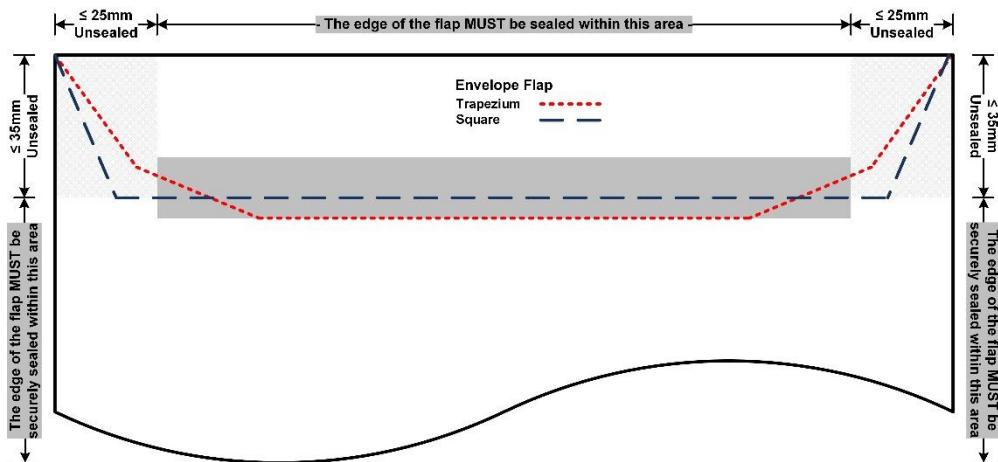


Figure 31 – Large Letter Sealing – Paper (Not to Scale)



Figure 32 - Large Letter Sealing - Poly Envelope (Not to Scale)

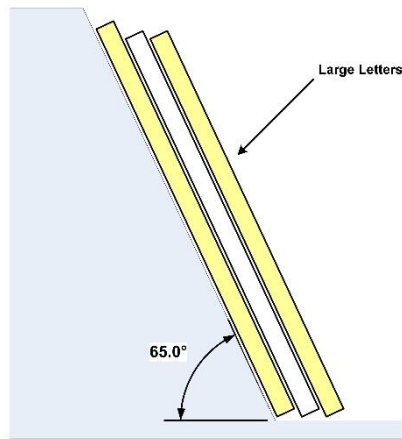


Figure 33 - Large Letter Separation - (Not to Scale)

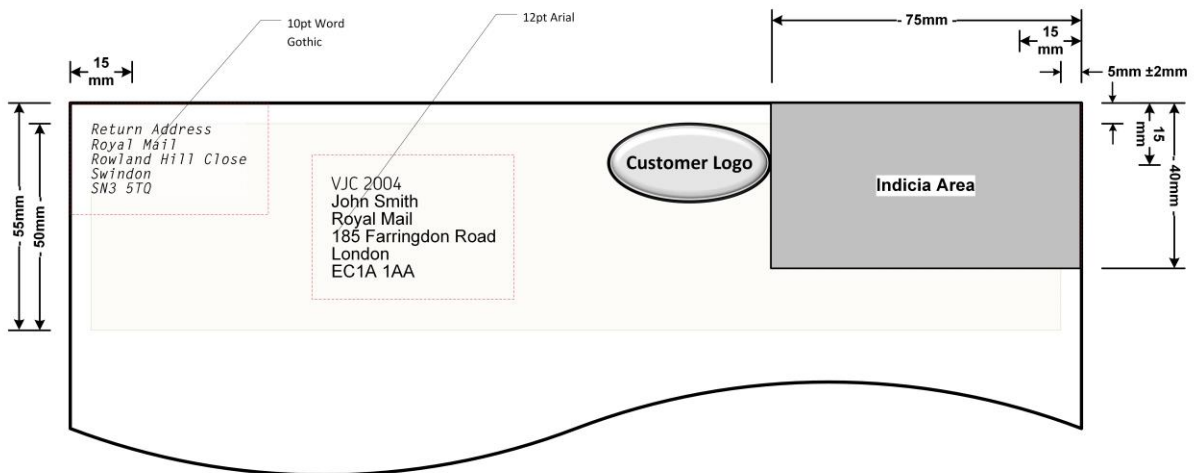


Figure 34 - Large Letter Paper Wrap - Printing (Not to scale)

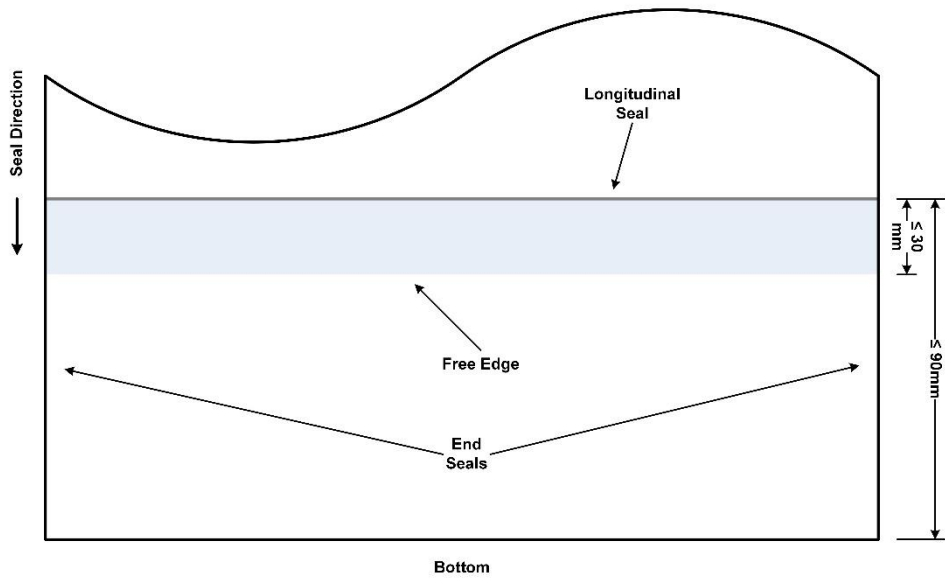


Figure 35 - Large Letter Longitudinal Seal - Poly Wrap (Not to Scale)



Figure 36 - Large Letter Clear Zones - Landscape (Not to Scale)

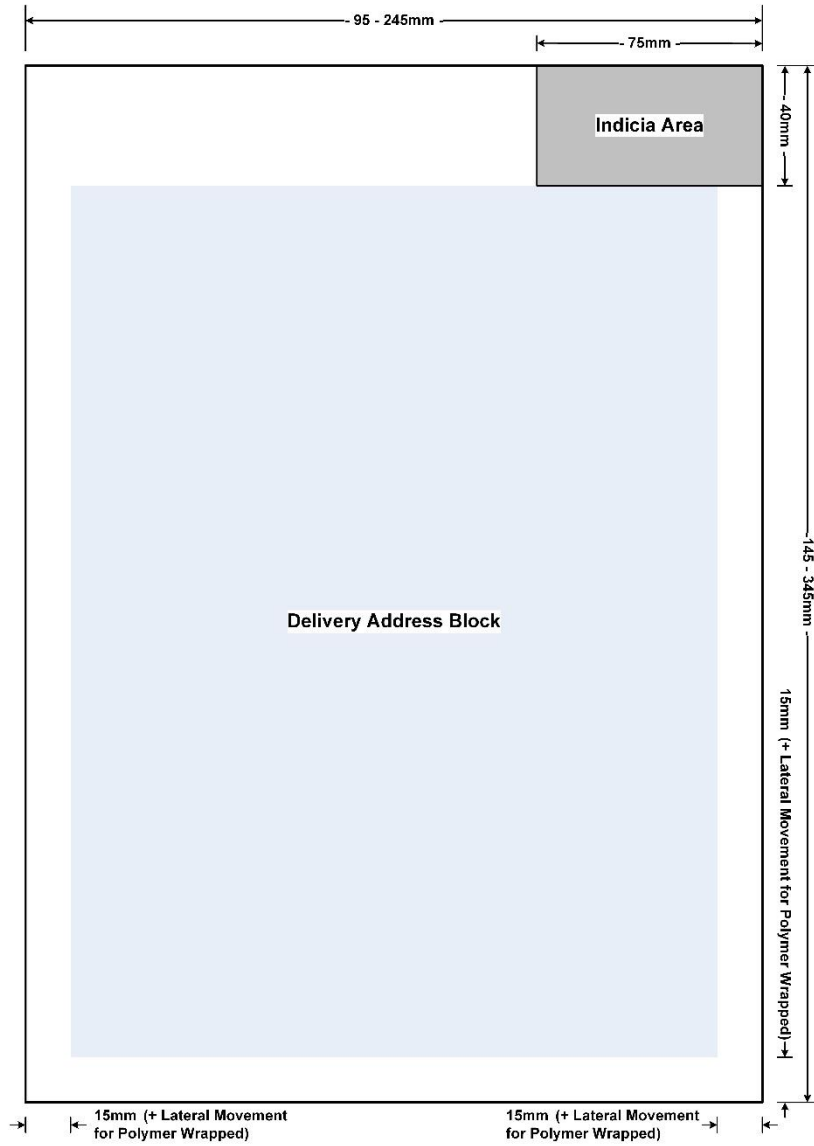


Figure 37 - Large Letter Clear Zones - Portrait (Not to Scale)