The Delivery Group

Appendix M: Royal Mail Mailmark®

1. Introduction

Royal Mail Mailmark® is about you applying a 2d or 4-state barcode to each of your Mailing Items to enable our automation processing machines to read them. Adding a Mailmark barcode to each Mailing Item enables the performance of your Mailmark Mailing to be monitored and measured whilst being handled in our automation. This provides additional reporting on an item by item basis and so gives you greater transparency with the benefit of providing extensive data analysis on your Mailmark Mailing performance.

Visit www.royalmailwholesale.com/our-services to find out more about the Services and Formats which Mailmark may be used with.

The Appendix M sets out physical design, Indicium, addressing, barcoding and other Royal Mail Mailmark specifications that are required when posting Mailing Items using Mailmark.

If you wish to use Mailmark to send **poll cards**, in addition to the requirements set out in this appendix, you are also required to meet the specification set out in section 3 of Appendix P of this User Guide

The Mailmark 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 Surcharges 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 Surcharges 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 Surcharges being applied.

2. Setting up with Mailmark

a. Sign the Royal Mail Mailmark® Schedule. Prior to the first handover of any Mailmark Mailing, you will need to sign the Royal Mail Mailmark® Schedule which details the terms and conditions under which the Mailmark option is offered. You are also required to accept the Royal Mail Mailmark Participant Terms and Conditions® (www.royalmailwholesale.com/royal-mail-mailmark) to become a Participant in a Supply Chain, and you acknowledge that before you can use the Mailmark option each of the Mail Originator, Mail Producer, Carrier and Bill Payer in your Supply Chain will need to have accepted the Participant Terms and Conditions to become a Participant.

b. Complete the implementation activities including setting up your Participant and Supply Chain IDs. Our Mailmark team will be able to guide you through the Mailmark option implementation timeline and actions required.

c. Set up your systems. One of the benefits of Mailmark is the provision of data analysis and consignment level performance reporting. To take advantage of this information it is necessary for you to upload your Docket via DocketHUB and to also provide additional mailing data in the form of an eManifest via our Web service, the eManifest Handling System (eMHS). Failure to upload data correctly, and on time, will affect your reporting and may result in Surcharges if your Mailing Items cannot be reconciled with the required data. A test eMHS system is available for your use and access can be arranged through our Mailmark team.

d. Go through the optional accreditation. The Mailmark option offers the benefit of being able to assess the performance of your Mailing Items. There is therefore no need for an upfront accreditation check of your Mailing Item design or address, Postcode and Delivery Point Suffix (DPS) accuracy. However, if you wish any 'peace of mind'

checks done on your physical Mailing Items please contact your Access Account Manager. These checks include barcode quality checks, pack design and barcode location and machine sorted letter tests.

You need to be able to be able to create and apply Mailmark barcodes and you must be able to upload eManifests into eMHS. If you would like to check that you can do so successfully please contact your Access Account Manager or the Mailmark team for support.

3. Polywrapped, paperwrapped and unwrapped Mailmark Mailing Items

If you wish to apply a Mailmark barcode to Letter format Mailing Items that are polywrapped, unwrapped (naked) or not sealed you can do so provided that you present, declare and pay for the items as Large Letters.

When using an outer wrapping to contain Mailing Item contents (e.g. polywrap for Large Letters or paperwrap for Letter and Large Letters), the dimensions permitted apply to the complete Mailing Item, including the outer wrapping and the contents. (For Mailing Items sent using a non-machineable service, the dimensions and Format are measured against the size of the insert if the outer can be easily folded.)

4. Useful Mailmark guideline and technical documents

We have created a number of useful guidelines and technical documents which you will need to refer to as they will provide you with details and instructions on:

- how to create your Mailmark barcode;
- how to ensure your systems correctly interface with the eMHS;
- how to create a 4-state barcode and barcode options;
- how to encode and decode 4-state barcodes; and
- Mailmark Surcharges.

You can find the guidelines and technical documents at www.royalmailwholesale.com/royal-mail-mailmark.

5. Mailmark Letters specification

5.1 Physical specification requirements:

Category		Specification Requirement	M/R
Size & Shape	**Shape**	Rectangular or square with straight sides and 90° corners	**M**
	Orientation	Landscape or portrait	**M**
	Size (H x L x D)	Rectangular Minimum – 90mm x 140mm, Maximum – 165mm x 240mm Square Minimum – 140mm x 140mm, Maximum – 165mm x 165mm	**M**
	Thickness	Minimum – 0.25mm, Maximum – 5mm	**M**
	Weight	Maximum – 100g	**M**
	Content / Inserts	• One or two standard size staples (maximum 24mm x 6mm) or paper clips (maximum 23mm long) may be inserted in the Letter. • Other metal objects such as keys, pens, coins etc. must not be placed in the Letter. • Inserts other than paper that are placed in an envelope should be fixed in position and attached to the largest paper insert. e.g. bank cards. • The spines on booklet inserts should be located on the reference edge [1].	**M** **M** **H** [2] **L** [3]

[1] 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, and the long edge to the left of the address for portrait Letters.
[2] Lowers the risk of moving inserts breaking through the Letter edges.
[3] This reduces the potential for mail damage following jams.

Category		Specification Requirement	M/R
	Lateral Movement	There are limitations on the lateral movement space that the insert may have. These are dependent upon the thickness of the Letter and apply to the largest paper insert (see Figure 1): • Where the thickness is 2mm – 5mm the lateral movement should be no more than 20mm. • Where the thickness is 0.25mm – 2mm, the lateral movement should be no more than 30mm.	**H** [4] **L** [4]
	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 2).	**M**

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.	**L** [6]
	Sealing	• Adhesives used must be dry and must not leak onto the open surface of the Letter. • Letters must not be stuck or caught together. • Envelopes should be securely sealed on the front, back, and all edges. • Letters presented in trays should be sealed to within a minimum of 35mm from the fold of the envelope flap, and 35mm from the envelope sides (see Figure 3). • For all other Letters, 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 4).	**M** **M** **H** [7] **L** [8] **L** [8]
	Paper Weight	Minimum - 70gsm for envelopes Recommended minimum 200gsm for postcards	**M** **H** [7]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity)	**H** [9]
	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** [10]
	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** [11]
	Finish - Digitally Printed Mail	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 ultra violet (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-	**L**[13]

[4] Where the Letter thickness is variable and lateral movement is high, there is an increased risk of the Letter content being separated from the envelope or wrap.
[5] Note that an unwrapped Mailmark Letter sized item will be treated in the first instance as an unwrapped Large Letter MM and not a manual letter.
[6] Tag codemark reading supports Mailmark reporting.
[7] This ensures that the Letter is strong enough to withstand the rigours of mechanical and manual handling.
[8] This may result in the unsealed portion of the flap being torn during processing.
[9] This facilitates Mailmark, address, and Indicium reading.
[10] This facilitates the application of codes and artwork to the Letter (i.e. the ink soaks in and does not rub off).
[11] This facilitates the singulation of the mail at machine infeed (i.e. fewer double fed Letters and missorts).
[13] The impact of this is limited to the artwork and it is highly unlikely to result in poor processing performance.

Category		Specification Requirement	M/R
		address side of the Letter as the characteristics of the varnish may make the mail unmachinable if applied to both sides [12]. 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.	
	One-Piece Mailer	See One-Piece Mailer Specification (including one-piece mailers, wrap mailers, coupon mailers, feature mailers, and machineable postcards) in section 5.10 below.	-
	Perforated Mailers	See Perforated Mail Specification (including perforations, zip tie, and pressure seal envelopes) in section 5.11 below.	-
	Do Not Redirect	See Do Not Redirect Specification in Appendix R.	-
	Logos & Advertising	• 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.	L [14] L [14]
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 must 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 M H [15] H [15]
	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).	L [16]
	Size	The window(s) on the front of the Letter must take up no more than 50% of the surface area.	M
	Size & Shape	• Front windows should be rectangular (with rounded corners), or circular and no more than 85mm in diameter (see Figure 5). • Where there are both front and back windows, the back window should be no more than 48mm in diameter and centred 31mm, plus or minus 2mm up from the bottom edge of the Letter.	L [15]
	Position	• Windows on the front of the envelope must avoid the Indicium 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 12). • Windows on the back of the Letter must be at least 18 mm from the bottom edge of the Letter, and be at least 15mm from the edge for the remaining three sides (See Figure 9 to Figure 12).	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 [16]

[12] They may have 'window-like characteristics' that reduce mechanical handling capability, increase static cling, and compromise codemark printing
[14] This will reduce any potential for address reading errors,
[15] This ensures that the Letter is strong enough to withstand the rigours of mechanical and manual handling, and facilitates Mailmark and address reading.
[16] This facilitates Mailmark and address reading.

Category		Specification Requirement	M/R
	Haze	The maximum haze value for the window should not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).	**H** [16]

5.2 Mailmark Letters physical specification - Figures

Figure 1 – Letter Inserts (Not to Scale)

Figure 2 – Letter Flexibility (Not to Scale)

Figure 3 – Letter Sealing – Trayed (Not to Scale)

Figure 4 – Letter Sealing – Untrayed (Not to Scale)

Figure 5 – Circular Window (Not to Scale)

5.3 Indicium

Category		Specification Requirement	M/R
Indicium	General	• 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 12).	M
Royal Mail Access Indicator – PPI	Access PPI		
	Indicium Size	• 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
	Clear Zones	• 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 L [17]
	Indicium Format / Colour	• 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
	Indicium Printing	• 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 [18]
	Indicium Skew	The skew should be no more than plus or minus 15° from the horizontal axis.	L [17]
Customer Access Indic.	Location	This must be located 5mm to the left of the Royal Mail Access Indicator.	M
	Shape	• The 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 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 Customer Access Indicator must be printed using a font size of at least 10 points.	M

[17] The indicia may facilitate the orientation of the Letter in the event of the Mailmark code not being read.
[18] This ensures that the indicia are human readable.

Category		Specification Requirement	M/R
	Clear Zones	A clear zone of 5mm, plus or minus 2mm should be provided above, below, and to the left of the Indicator.	**L**[19]
Stamp-Like Indicia		See Stamp-Like Indicia Specification.	-
Digital Stamp		See Digital Stamp Specification.	-

5.4 Mailmark Letters Indicium - Figures

Figure 6 – Letter indicia location and clear zones

5.5 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. Recommended requirements enable effective processing when Letters cannot be processed against a Mailmark code.

Category		Specification Requirement	M/R
Delivery Address	**Delivery Address Components**	Mailer Defined Information VJC100 (if required) Addressee Ms A N Other] Organisation Royal Mail] Delivery Thoroughfare 185 Farringdon Road] Address Locality London] block Postcode EC1A 1AA]	**M**
	General	• Only one Delivery Address must be printed on the Letter. • The Delivery Address must be printed on the front of the Letter, on the same side and in the same orientation as the Indicium. • 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). • It may be wholly printed in English, or wholly in Welsh where a Welsh address is provided in PAF. The inclusion of addresses printed in a combination of English and Welsh is not permitted.	**M**

[19] This is a preference that has no impact on mail processing.

Category		Specification Requirement	M/R
	Mailer Defined Information (Optional)	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 SSC. • The mailer defined information should be left justified and aligned to the rest of the Delivery Address block. • The content may be of a different font and size to the other Delivery Address block elements. • The line spacing should be consistent with the rest of the Delivery Address block. • The length of the mailer defined information should not exceed 64 characters.	**M** **L** **L** **L** **L** **L**
Delivery Address Cont.	**Content**	• The Delivery Address must be a PAF address that includes at least one premise element, one thoroughfare element, one locality element [20], and the postcode. • A maximum of 2 lines of addressee information may be included above the PAF address. • The number of characters per line of the delivery address block should not exceed 64 characters (including spaces). • No counties or UK countries should be included within the Delivery Address block.	**M** **L** **L** **L**
	Structure & Format	• The Delivery Address must be provided as a 'block' of left justified text with uniform line spacing (1-4mm) and with no blank lines. • 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. • The Postcode must always be printed in 'UPPER CASE', and must be on the last line of the Delivery Address. • There should be a gap of 1-2 spaces between the 2 parts of the postcode. • 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. • Only punctuation that is included with the PAF address should be included, or alternatively all punctuation may be removed. • The Delivery Address should be printed in 'Title Case' (preferred) or 'UPPER CASE'. • The word spacing should be 1-2 spaces and no more than 5mm. • The Delivery Address block skew should be no more than plus or minus 5°.	**M** **M** **M** **L** **L** **L** **L** **L** **L**

	Preferred Fonts	• A Single font should be used for the whole Delivery Address block and this should be printed using :
		  ○ 10-12pt font
		  ○ Normal character spacing
		  ○ Pitch set at 10-12 characters per inch.
			L

[20] Where there is both a locality and a post town in the corresponding PAF record it is recommended that both are included.

Category		Specification Requirement	M/R
	Preferred Fonts Cont.	<u>Preferred Non-Proportionally Spaced Fonts are :-</u> Courier, Courier New, Letter Gothic, Lucida Console, Lucida Sans Typewriter, OCR B, Word Gothic <u>Acceptable Proportionally Spaced Fonts are :-</u> 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	**L**
	Fonts - General	Any fonts that are used should be simple and easy to read. The following recommended specifications should be followed: • *Italic*, **bold**, pseudo script, serifs, computer zero (Ø) and <u>underlining</u> should be avoided. • There should be clear vertical gaps of at least 0.25mm between extremities of adjacent characters. • 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 should be complete, clear and of high resolution, with individual stroke having a uniform thickness of 8% - 16% of the height of the character.	**H**
Delivery Address Cont.	**Print Quality**	• The Delivery Address block MUST be printed using a dark colour (preferably black) on a light background. • The paper opacity value should be at least 85 % (BS ISO 2471 - Paper and board. Determination of opacity (paper backing)). • The contrast ratio for addresses printed on envelopes should be at least 50 % (window inserts 55%). • 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** **L** **L** **L** **L** **L**

Category		Specification Requirement	M/R
	Location	• The Delivery Address block must be positioned on the front of the Letter below and to the left of the Indicium (see Figure 9 to Figure 11). • The Delivery Address block must not be printed in the Indicium area, or in the border area: ○ Landscape – 15mm-40mm top 15mm left and right, and 18mm at the bottom, ○ Portrait - 40mm top, 18mm left, 15mm right and bottom. • The Mailmark code must be at least 2mm from the Delivery Address block. • The Delivery Address block should not be printed over the edge of the envelope flap. • With the exception of the Mailmark code, 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 should always be at least 50mm from the top edge of the Letter. • The Delivery Address block should not encroach into the tag codemark clear zone. (see Codemark Clear Zones).	**M** **M** **M** **L** **H** **L** **L**
	Window Clear Zone	Where window envelopes are used, a minimum clear zone of 2mm within the window and 3mm on the envelope should be used. 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).	**L**
Return Address	**Return Address Example**	Return Address Royal Mail Rowland Hill House Swindon SN3 5TQ	**M**
	General	• Only one return address must be printed on the Letter. • Nothing else that looks like a return address must be printed on the Letter. • The return address may be printed in English or Welsh (where provided in PAF). The inclusion of return addresses printed in both English and Welsh is not permitted.	**M**
	Content	• 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 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**

Category		Specification Requirement	M/R
Return Address Cont.	**Structure & Format**	• 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 should 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**
	Fonts	• Letter Gothic or Lucida Console font must be used for the whole return address and this must be printed using: ○ 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	The return address must be either located: • 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 **13**). • On the front of the Letter in the top left corner (with no element closer than 75mm to the right edge) (see Figure 14), and no closer than 12mm to the Delivery Address.	**M**
	Clear Zones	• 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**

5.6 Mailmark 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 clear zones – maximum portrait (not to scale)

Figure 13 – Letter return address preferred – back (not to scale)

Figure 14 – Letter return address – front landscape example (not to scale)

5.7 Mailmark Code

Category		Specification Requirement	M/R
General	**General**	• Only one **Mailmark** 2D code or 4-state barcode must be printed on the Letter (the only exception being 4-State Consolidator Barcode which may be printed onto Letters that bear another Mailmark code). • The Mailmark 2D code or 4-state barcode content must be aligned to the human readable attributes that are printed on the Letter and be appropriate for the service used. • The Mailmark 2D code or 4-state barcode must always be located on the same side of the envelope as the Indicium and the Delivery Address block. • The Mailmark 2D code or 4-state barcode and clear zone must remain visible at all times. • The Mailmark 2D code or 4-state barcode must not be printed over the edge of the envelope flap.	**M**
	E Manifest Handling Specification	Mailings must meet the requirements of the eManifest Handling System Customer Upload Specification (process and implementation).	**M**
	Mailmark Barcode Specification	The Mailmark codes must meet the requirements of Mailmark Barcode Specification (2D & 4-State Code and content definition).	**M**

Category		Specification Requirement	M/R
2D			
2D Codes Cont.	**Code Type**	You must use a Data Matrix type ECC200 code complying with the international standard ISO/IEC 16022:2006. Formats 7, 9, or 29 may be used. **Format 7** (24 x 24 modules) **Format 9** (32 x 32 modules) **Format 29** (48 x 16 modules)	**M**
	Data Content	The data content must comply with the C40 encodation scheme (Basic Character set - Uppercase Alphas, Numerals and SPACE only) as described within ISO 16022:2006. Full details of the required Mailmark 2D code content is provided in the EIB Barcode Definition Document.	**M**
	Size & Shape	• The Mailmark 2D code must have a module size of 0.5 – 0.7mm. • Every module must be square. • The Mailmark 2D Code must be orientated horizontally or vertically, but must not intentionally be printed with any degree of skew.	**M**
	Clear Zone	• No other text, patterning, or graphics shall be printed in an area around the 2D code that is at least 4 times the module size (i.e. at least 2mm when the module size is 0.5mm, and at least 2.8mm when the module size is 0.7mm). • The clear zone requirements apply at all times, including when windows envelopes are used and after the Letter is tapped on all four edges, to induce maximum insert movement i.e. The whole of the 2D code and the Delivery Address block together with their required clear zones must be visible at all times.	**M**
	Location	The 2D code must not be printed in the Letter border area (see Figure 9 to Figure 12): • Landscape - 15mm top, left and right, and 18mm at the bottom; • Portrait - 18mm left, 15mm top, right and bottom; • The 2D code may encroach into the Indicium area provided sufficient space is left for the Indicium and its associated clear zone. (i.e. top right corner (landscape or portrait) in an area 75mm long & 40mm high); • The 2D code must not be printed in the tag codemark clear zone (i.e. 60mm up from the bottom right corner of the Letter, and 10mm high x 100mm long); • Where the address and Mailmark code are printed onto a label, the Mailmark clear zone (including the clear zone to the edge of the label) must be maintained. The Delivery Address clear zone may be limited to 2mm.	**M**
	Print Quality	• The 2D code shall be printed in black on a background that is of consistent contrast by design, with a positive contrast for the symbol (dark on a light background). • The 2D code must be printed to ISO 15415:2011 grades 4(A) or 3(B) when read under white light. Note: A and B are the equivalent ANSI standards understood by American standard users. (A Module size of 0.5mmequates to 6 dots when printed at 300dpi, whilst a module size of 0.7mm equates to 8 dots when printed at 300dpi). • No other text, patterning, or graphics shall be printed in the area occupied by the 2D code. • Printing or embossing of security backgrounds, if essential, should be faint, of uniform consistency and be on the inside of the envelope.	**M** **M** **M** **L** [21]

[21] The presence of security backgrounds or embossing may limit 4-State barcode reading performance. Such instances are infrequent.

Category		Specification Requirement	M/R
4-State Barcode	Code Type	The 4-State barcode is a barcode that uses 4-State symbology. The data is encoded to produce a barcode that includes bars in 4 possible states - “D” = Descender bar, “A” = Ascender bar, “F” = Full bar, “T” = Track bar (DAFT). Two codes are available: • Barcode C – Consolidators – 66 bars, and up to 84mm long • Barcode L – High volume Mailers - 78 bars and up to 99mm long.	
4-State Barcode Cont.	Data Content	The code content must be aligned to the human readable attributes that are printed on the Letter, and be appropriate for the product used.	M
	Size & Shape	• The 4-State barcode must be printed at a pitch of 20-24 bars per 25.4mm. • The barcode pitch must be consistent throughout the length of the code. • The Ascender and Descender bars are 1.6 to 2.16 mm high, the Track bar is 1.02 to 1.52 mm high, and the bar width is 0.38 to 0.63 mm, with the full bar being 4.22mm to 5.84mm high. The width requirements apply throughout the whole bar (i.e. no part of the bar can be less than 0.38mm wide or greater than 0.63mm wide). • The print quality must be consistent throughout the code (i.e. there must be no gaps between printed dots that may be used to print the code).	M
	Symmetry & Skew	• The vertical alignment of the code must be consistent. The track element of the bars must be symmetrical about the centre line of the code, plus or minus 10% of the height of the centre line (see Figure 15). • The barcode skew must be less than 5º.	M
	Code Clear Zone	• A clear zone of 2mm must be maintained on all four sides of the 4-State barcode. • The clear zone requirements apply at all times, including when window envelopes are used and after the mail item is tapped on all four edges, to induce maximum insert movement (i.e. the whole of the 4-State barcode and the address block together with their required clear zones must be visible at all times.	M
	Location	The 4-State barcode must not be printed in the border area (see Figure 9 to Figure 12): • Landscape - 15mm top, left and right, and 18mm at the bottom; • Portrait - 18mm left, 15mm top, right and bottom; • The 4-State barcode may encroach into the Indicium area provided sufficient space is left for the Indicium and its associated clear zone. (i.e. top right corner (landscape or portrait) in an area 75mm long & 40mm high); • The 4-State barcode must not be printed in the tag codemark clear zone. i.e. 60mm up from the bottom right corner of the Letter, and 10mm high x 100mm long. • The 4-State barcode must not be printed over the edge of the envelope flap. • Where the address and Mailmark code are printed onto a label, the Mailmark clear zone (including the clear zone to the edge of the label) must be maintained. The Delivery Address clear zone may be limited to 2mm.	M

Category		Specification Requirement	M/R

	Print Quality	• The 4-State barcode must be printed in a contrast medium, typically black bars on a white background.
		• No other text, patterning, or graphics shall be printed or present in the barcode area and its clear zone (i.e. this may be design graphics or Letter substrate characteristics).
		• A minimum Print Contrast Ratio (PCR) and a minimum Reflective Difference (RD) must be applied. These values are:
		  ○ Minimum PCR is 40%
		  ○ Minimum RD is 30%
		• The print quality shall be consistent throughout the bars.
		• The edges of the 4-State Mailmark barcode should be sharp and clearly defined.
		• Printing or embossing of security backgrounds, if essential, should be faint, of uniform consistency and be on the inside of the envelope.
			M
			M
			M
			H [22]
			H [22]
			L [21]

5.8 Mailmark Code - Figures

Figure 15 –4-State Mailmark Barcode symmetry

Figure 16 – 4-State Mailmark Barcode bar skew Y (not to scale)

Figure 17 – 4-State Mailmark Barcode code skew Z (not to scale)

5.9 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	M/R
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 should be free of any window material, text and graphics (see Figure 9 to Figure 12).	L [23]

[22] Ink jet 4-State codemarks that consist of individual dots (rather than a complete bar) may be read. However, any reduction in print quality may limit 4-State barcode reading performance.
[23] The printing of the codemark may impair the artwork visuals.

Category	Specification Requirement	M/R
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 should be free of any window material, text and graphics (see Figure 9 to Figure 12).	**L** [23]

5.10 Other Mailmark Letter Requirements

5.10.1 One Piece and 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 Indicium, addressing and Mailmark requirements remain as standard. The specification is designed to ensure that Royal Mail Letter processing machines can process and read Letters effectively at high speed without the need for manual or other intervention.

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. The 3-Ply element provides a reference edge for the mailer, and the varied thickness ensures the items do not stick together.
Inserts	Only Paper inserts are permitted **(H [24])**	**(M)** No Insert is permitted	• **(M)** The booklet must be paper only. • **(M)** The booklet must rest on the reference edge (the longest edge opposite the Indicium) • **(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 [25])**	No Insert is permitted
Shape	**(M)** Rectangular or Square		**(M)** Rectangular only	**(M)** As specified below

[24] 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.
[25] 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
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 **(L [25])**	Folded three times to produce a pocket as follows **(L [25])** :- Fold 1 - 70mm from bottom edge. Fold 2 - 215mm from bottom. Fold 3 - 360mm from bottom	**(M)** Folded twice as follows (see Figure 20): • Fold 1 - creates an internal flap that amounts to 55% of the height of the shorter edge of the finished mailpiece (a manufacturing tolerance of plus or minus 2mm is permitted). • Fold 2 - forms another flap that covers the internal flap, and ends 1mm short of the bottom (reference) edge.
Reference Edge [26]	• **(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 portrait items the reference edge is the longest left edge. • **(M)** For square mailers, the reference edge is the edge beneath the address.		• **(M)** Must be a folded edge. • **(M)** For landscape this is the longest edge beneath the address. • **(M)** For portrait items this is the longest left edge.	
Mailer Dimensions	**(M)** Minimum and maximum mailpiece dimensions.		165mm plus or minus 5mm x 145mm plus or minus 5mm. **(L [25])**	**(M)** Minimum and maximum mailpiece dimensions.
Mailer Thickness	**(M)** Minimum and maximum mailpiece thickness		**(H [27])** 2mm including insert.	**(M)** Minimum and maximum mailpiece thickness.
Mailer Max weight	**(M)** Minimum and maximum mailpiece weight.		**(L [25])** No more than 20g	**(M)** Minimum & maximum mailpiece weight
Paper Weight	**(M)** Minimum 100gsm	**(M)** 150gsm - 190gsm	**(M)** Minimum 115gsm	**(M)** 120gsm – 150gsm (150gsm recommended)

[26] The reference edge is a fold on a particular edge of the Letter, which enables it to be processed through the machines efficiently.
[27] Inconsistent thickness causes mechanical handling issues.

The Delivery Group

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Paper Thickness	Not applicable	0.13mm - 0.175mm **(L [25])**	Not applicable	**(M)** 2-Ply element minimum 0.18mm **(M)** 3-Ply element minimum 0.27mm
Flaps	• Flap should run parallel to the reference edge and may be on the front or back of the mailer. **(L [25])** • The minimum height for a flap 25mm. **(L [25])** • The maximum height for a flap depends on the mailpiece size but must be less than 40mm from the bottom of the mailpiece. **(L [25])**	Not applicable	Fold 3 forms a sealing flap 35mm deep. **(L [25])**	Not applicable
Sealing	**With Inserts** **(M)** All unfolded sides (including the flap) must be glued with a **continuous seal.** **No Inserts** **(M)** All unfolded sides must be glued using a spot seal or a continuous seal.	**(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	• **(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	• **(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.			

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
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.	• **(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.	• **(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.
Glue Thickness	No more than 80 microns thick **(H [28])**			
Spot Gluing	• Glue spots may be circular or elliptical. • Distance between two closest edges of glue spots should be no more than 10mm **(H [25])** • Size of spots should be at least 5mm in diameter / length. **(H [25])** • Maximum distance from edge of mailpiece should be 5mm, plus or minus 2mm **(H [25])** (see Figure 21)	• 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 [25])** • Long edge spots be at least 15mm in diameter / length and should be no more than 45mm apart. **(H [25])** • Maximum distance from edge of mailpiece should be 5mm, plus or minus 2mm **(H [25])** (see Figure 23)	Not applicable	

[28] Welds greater than this thickness may cause mechanical handling issues.

Physical Reqts	One-Piece Mailer / Wrap Mailer	Feature One-Piece Mailer	Coupon One-Piece Mailer	Machineable Postcard
Continuous Gluing	A minimum 4mm wide sealed to within 3mm of the edge **(H [25])** (See Figure 22)	Not applicable	• Continuous 10mm band of adhesive to the side edges of the mailer. **(H [25])** • 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 [25])** • **(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 [25])** (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	• Matt finish is preferred. **(H [29])** • Digitally Printed Mail – See Note below			Finish – Matt or Silk (Matt preferred) **(H [29])**
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. **(L [25])**	Not applicable		

Note - Digitally Printed Mail

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 process.

The application of an ultra violet (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 mailpiece as the characteristics the varnish may make the mail unmachineable if applied to both sides[30].

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

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

The pressure exerted on the mailpiece during automated processing may cause colour offset on digitally printed items. Therefore, it is recommended that there should be no offset 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.

5.10.2 One Piece and Wrap Letter Mailer - Figures

Figure 18 - Coupon One-Piece Mailer - dimensions (not to scale)

Figure 19 – Coupon One-Piece Mailer - finished (not to scale)

Figure 20 – Machinable postcard (Not to Scale)

Figure 21 – Standard One-Piece Mailer – spot weld requirements (not to scale)

Figure 22 – Standard One-Piece Mailer – glue line requirements (not to scale)

Figure 23 – Feature Letter mailer (not to scale)

Figure 24 – Standard One-Piece Mailer - internal perimeter clear zone (not to scale)

5.10.3 Perforated Letter Mailers – Requirements

For the purposes of this document, a Perforated Letter 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 Indicium, addressing and Mailmark requirements remain as standard. The Mailmark specification is designed to ensure that Royal Mail Letter processing machines can process and read Letters effectively at high speed, without the need for manual or other intervention.

a. Roulette Perforations

Category		Specification Requirement	M/R
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 either landscape or portrait orientation (but not square).	**H**
	Design	• 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 Indicium must not be printed over the perforations, but the Indicium 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. The above requirements are illustrated in Figure 25 and Figure 26.	**H**
	Paper Weight	At least 100gsm.	**H**
	Cuts & Bridges	• 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 27). • 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 27). • 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.	**H**
	Sealing	• 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.	**H**

b. Zip Tie Perforations

Category		Specification Requirement	M/R
zip tie Perforations	**Definition**	These perforations consist of 2 lines of parallel cuts (holes) and paper bridges in the Letter that form a perforated strip. Access to the Letter content is gained by tearing the strip along the lines of perforations in a particular direction.	
	Orientation	The mailpiece must be in either landscape or portrait orientation (square letters are not acceptable).	**H**
	Design	• The zip tie must always be placed on the back of the mailpiece. • 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 28 and Figure 29; the orientation and 'Tear' directional requirements relative to position of the Indicium 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 30). • The zip tie must be positioned at least 9mm from the edge of the flap (see Figure 30).	**H**
	Paper Weight	At least 150 gsm.	**H**
	Cuts & Bridges	• 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 31. • The cuts must be rectangular and have a width of no more than 0.1mm. • All cuts and bridges must be of uniform size.	**H**
	Sealing	• 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.	**H**

c. Pressure Seal Perforations

Category		Specification Requirement	M/R
Pressure Seal	**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	

Category		Specification Requirement	M/R
		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 either landscape or portrait orientation (square letters are not acceptable).	**H**
Pressure Seal Envelope Cont.	**Design**	• 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 Indicium (bottom side on Landscape mail and left side on portrait mail) 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 32 and Figure 33). • The perforated strip must extend to each edge of the envelope (see Figure 32 and Figure 33). • The Indicium must not be printed over the perforations, but the Indicium 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.	**H**
	Paper Weight	• 3-ply DL design - at least 100gsm, 2-ply C5 design - at least 150gsm.	**H**
	Short Edge Roulette Perforations	• 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 27). • 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.	**H**
	Long Edge Roulette Tear Off Strip	• 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 27). • 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.	**H**
	Sealing	• 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 [31], 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.	**H**

[31] This ensures that the Perforated Strips are totally sealed long their length.

Category		Specification Requirement	M/R
		• 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.	

5.10.4 Perforated Letter Mailers – Figures

Figure 25 - Roulette perforation landscape Letter – bottom perforation (not to scale)

Figure 26 - Roulette perforation portrait Letter – left perforation (not to scale)

Figure 27 – Roulette perforation dimensions (not to scale)

Figure 28 - Zip tie Letter orientation (back view) – landscape mail (not to scale)

Figure 29 - Zip tie Letter orientation (back view) – portrait mail (not to scale)

Figure 30 - Zip tie Letter and envelope flap (not to scale)

Figure 31 - Zip tie dimensions (not to scale)

Figure 32 - Pressure seal Letter envelope – front of Letter perforations (not to scale)

Figure 33 – Pressure seal Letter envelope - back of Letter (not to scale)

6. Mailmark Large Letters specification

6.1 Physical specification requirements applicable to ALL Large Letters

These requirements apply to all Large Letters unless stated otherwise.

Category		Specification Requirement	M/R
Size, Shape & Design	**Shape**	Rectangular or square with straight sides and 90° corners	**M**
	Orientation	Landscape or portrait	**M**
	Size (H x L x D)	Rectangular Minimum – 95mm x 145mm, Maximum – 245mm x 345mm Square Minimum – 145mm x 145mm, Maximum – 245mm x 245mm	**M**
	Thickness	Minimum – 0.5mm, Maximum – 10mm	**M**
	Weight	Minimum – 10g, Maximum – 750g	**M**
	Content / Inserts	• Inserts other than paper that are placed in an envelope must be fixed in position and attached to the largest paper insert. The inserts may include small metal objects such as keys, coins, and badges. • The spines on magazine inserts should be located on the reference edge [32].	**M** **L** [33]
	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 34).	**M** **H** [34]
	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 35): ○ 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.	**M**

[32] 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.
[33] This enables effective presentation to the machine and subsequent processing.
[34] Where the Letter Large thickness is variable and lateral movement is high, there is an increased risk of the Large Letter content being separated from the envelope or wrap.

Category		Specification Requirement	M/R
		○ 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 unmachinable.	
Design	**Separation**	• Large Letters must be capable of separating by sliding one from another under the force of gravity, when placed on a slope of 65 degrees to the horizontal (see Figure 38).	**M**
	Do Not Redirect	Not permitted for Large Letters	
	Logos & Advertising	• Any logo or advertising slogan printed on the Large Letter should not look like an address or include a geographical location, country or a Royal Mail bag or bundle label. • Slogans where the company name contains the words 'Return', 'Address' and 'Undelivered' should be avoided.	**L** [35] **L** [14]

6.2 Paper envelopes

Category		Specification Requirement	M/R
Paper Envelope Construction & Design	**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** [36]
	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 36).	**M** **M** **H** [37] **L** [38]
	Paper Weight	Minimum 70gsm for envelopes & minimum 200gsm for postcards	**H** [39]
	Opacity	The paper used should be at least 85 % opaque (BS ISO 2471 - Paper and board. Determination of opacity).	**H** [40]
	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** [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]

[35] To reduce any potential for address reading errors,
[36] There is no preference here.
[37] This ensures that the seals are strong enough to remain intact during the rigours of mechanical and manual handling.
[38] This may result in the unsealed portion of the flap being torn during processing
[39] This ensures that the Large Letter is strong enough to withstand the rigours of mechanical and manual handling.
[40] This facilitates Mailmark, address, and Indicium reading.
[41] This facilitates the application of codes and artwork to the Large Letter (i.e. the ink soaks in and does not rub off).
[42] This facilitates the single item sorting when mail is placed on the machine (i.e. fewer double fed Letters and missorts).

Category		Specification Requirement	M/R
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 [16] H [43] H [16]
	Number	There should be no more than 1 window on the front of the Large Letter.	L [44]
	Size	The window must take up no more than 25% of the surface area.	M
Window cont.	Shape	Windows should be rectangular (with rounded corners).	L [39]
	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 42 and Figure 43).	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 [16]
	Haze	The maximum haze value for the window should not exceed 75% in accordance with (ASTM D1003-00 Procedure A (Hazemeter)).	H [16]

6.3 Polymer wrap

Category		Specification Requirement	M/R
Polymer Wrap Construction & Design	Material	• Polymer Large Letters must be made from a polymer film. e.g. polyethylene. • The film must be intact, undamaged and must not be punctured, split or torn [45]. • The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals. • The single layer film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter. • Where the Delivery Address is to be read through the film, the gloss value should not exceed 150 (American standards of testing and materials (ASTM) 2457 Measured at 60°). • Where the Delivery Address is to be read through the film, the haze value should not exceed 75 % (ASTM D1003-00 Procedure A (Hazemeter)).	M M M M H [16] H [16]
	Design	Any text, barcode, or graphics that are printed on the wrap should adhere to the film and should not break up or wear during processing.	M

	Sealing	• The wrap must be securely sealed.
		• The requirements for the longitudinal seal are as follows (see Figure 39).
		  ○ The seal for the Polymer wrap must run along the length of the Large Letter.
		  ○ The seal must be secured along the whole length of the seal and at each end.
		  ○ The free edge of the seal must be less than 30mm deep.
		  ○ When located on the front of the Large Letter, the seal must not be over the Delivery Address Block or the Mailmark code.
			M
			M
			M
			H [46]
			M

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

Category		Specification Requirement	M/R
		○ The preferred location for the seal is on the back of the Large Letter.	L [46]

6.4 Polymer envelope

Category		Specification Requirement	M/R
Construction	Material	• Polymer Large Letters must be made from a polymer film (e.g. polyethylene). • The film must be intact, undamaged and must not be punctured, split or torn [45]. • The film must be sufficiently robust to tolerate manual handling without tearing or splitting at the seals. • The film must be greater than 15 µm (15 microns) thick when measured at any point on the Large Letter.	M H [46] M M
Poly Env. Construction	Sealing	• The polymer envelope must be fully sealed. • 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. • 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 37).	M M M M M H [39]

6.5 Unwrapped (Open) Large Letters

Category		Specification Requirement	M/R
Design	General	Standard physical requirements for paper Large Letters apply (see section 6.1), with the addition of the following specific requirements.	M
	Specific Requirement	• The spine must always be on a long edge. • The spine must be glued or stapled. (Punch & bind bindings are not permitted). • 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

6.6 Indicium

Indicium requirements are the same as those for Letters.

6.7 Addressing

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

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

Category		Specification Requirement	M/R
Delivery Address Location	**General**	The Delivery Address must not be printed in the border area (see Figure 11 and Figure 43): • Landscape - 40mm top, and 15mm to the left, right, and the bottom. • Portrait - 40mm top, and 15mm to the left, right, and the bottom.	**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. • The Delivery Address block and the Mailmark code must not be printed over or beneath the longitudinal seal. • 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. <u>Large Letters over 162mm x 229mm</u> The return address must be located either: • on the back of the Large Letter and centred within the top 40mm. This is the preferred location as it avoids any confusion with the Delivery Address block (see • Figure **13**), or • on the front of the Large Letter in the top left corner (with no element closer than 75mm to the right edge, and no closer than 12mm to the Delivery Address (see Figure 14).	**M**

6.8 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 42 & Figure 43): • Landscape - 40mm top, and 15mm to the left, right, and the bottom where the Mailmark code is printed a paper or polymer envelope or where it is printed on an insert (carrier sheet) in a poly wrapped Large Letter. • Portrait - 40mm top, and 15mm to the left, right, and the bottom where the Mailmark code is printed a paper or polymer envelope or where it is printed on an insert (carrier sheet) in a poly wrapped Large Letter. • Where there is Lateral Movement of the Insert within a Polymer 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. • The code must not be printed over the edge of the envelope flap or under the longitudinal seal.	**M**

6.9 Mailmark Large Letters – Figures

Figure 34 – Large Letter lateral movement (not to scale)

Figure 35 – Large Letter flexibility (not to scale)

Figure 36 – Large Letter sealing – paper (not to scale)

Figure 37 – Large Letter sealing – poly envelope (not to scale)

Figure 38 – Large Letter separation – (not to scale)

Figure 39 – Large Letter longitudinal seal – poly wrap (not to scale)

Figure 40 – Large Letter return address preferred – back (not to scale)

Figure 41 – Large Letter return address – front landscape example (not to scale) update

Figure 42 – Large Letter clear zones – landscape (not to scale)

Figure 43 – Large Letter clear zones – portrait (not to scale)

7. eManifest

The eManifest is an electronic record of your Mailmark Mailing Items (Letters and Large Letters) posted against a non-transferrable unique Supply Chain ID (SCID) on each day. The data within the eManifest, together with the machine processing data validated against it, is used for reporting and the SCID represents the client, mail producer, carrier and bill payer for that mailing.

7.1 eManifest requirements and procedure

An eManifest is a mandatory requirement for both 4-state barcode Mailmark Mailings Items and 2D data matrix Mailmark Mailings Items and is in addition to a Manifest.

1. the address data file is sorted and populated at item level with Mailmark information (Supply Chain, unique item ID, barcode data string etc) through a software solution or in-house mail producer IT systems. This creates a file which would then uploaded into an eManifest.
2. an eManifest for each unique SCID is opened and created via a webservice call to the eMHS. This can be done by any of the Participants in the Supply Chain.

3. Mailmark files, with the individual items for that SCID, for a single day's handover are then uploaded to the eManifest either as a single file or in Batches. This is mandatory for any Mailmark Mailing. If data files are uploaded in Batches, amendments can be made to any Batch until the eManifest been confirmed. At the point of confirmation, no further changes to a Batch can be made.
4. Batches can be uploaded up to 28 days in advance of the handover date.
5. When all the Batches or single file for the SCID have been uploaded, the eManifest is submitted and confirmed. At this point no further changes can be made to the uploaded files.
6. One eManifest is required per SCID per day that mail is being handed to Royal Mail. It is important that you include all Mailing Item data for that day's handover in the eManifest. If you don't we will see those items as we process them and may invoice the Bill Payer for them ;
7. each eManifest will have a unique eManifest ID. This eManifest ID and Supply Chain ID (SCID) must be included in the relevant fields on the Manifest.

Please note:
Each Batch must have a minimum volume of 4,000 Mailing Items. It is possible to split Batches and submit more than one Batch to make use of reporting by Batch, providing each Batch contains the minimum volume of Mailing Items required.

7.2 When you must submit your eManifest

- An eManifest can be created up to 28 days prior to a handover date.
- The eManifest must be confirmed the day prior to the mail handover date (date Royal Mail physically receives the mail);
- The deadline for confirming Network Access Item eManifests is configured to 11.30pm on the submission date specified in the eManifest. At this time, any remaining open Item eManifests will be automatically confirmed and closed to further Batch submissions.
- The deadline for confirming Consolidator Item eManifests is configured to 5am on the submission date specified in the eManifest. At this time, any remaining open Item eManifests will be automatically confirmed and closed to further Batch submissions.

7.3 Handing over Mailing Items

Mailing Items should be handed over on the day the eManifest is confirmed. Please note that if Mailing Items are handed over five (5) or more working days after the eManifest is confirmed the Bill Payer may be invoiced twice and may have charges for 'unManifested items' applied.

7.4 Failure to create an eManifest

If an eManifest is not created we may process your mail and apply adjustment charges. Please note that without an eManifest we cannot provide reporting.

7.5 Mandatory fields within an eManifest

The following information is required:

Header:
1. Supply Chain ID (SCID)
2. Mail Originator
3. Date (the date of the eManifest confirmation and the handover date)
4. eManifest status (open, finalised, test)
5. eManifest ID

Detail:
1. Unique Mailing Item ID
2. Batch ID
3. Address (full address is recommended, only postcode and DPS are required. Recipient details must not be included)
4. Product attributes (format, weight etc.)

The Mailmark eMHS implementation guidelines contain more information and is available from your Access Account Director.

1.1 A new Appendix R: Do Not Redirect Letters will be added as follows:

Appendix R: Do Not Redirect Letters

1. Do Not Redirect Letters

This appendix provides the Do Not Redirect (DNR) design requirements for Business Letter Products (including OCR and Mailmark). The Do Not Redirect service is provided for use by local authorities when posting correspondence regarding Housing Benefit and Council Tax Benefit.

Do Not Redirect requirements are mandatory. Requirements in this appendix for Letter size and indicia type take precedence over the core Letter format specification requirements.

2. DNR – General Requirements

Component		Value
Size (L & H)		• Minimum - 218mm long x 108mm • Maximum - 240mm long and 165mm high [47]
Indicia Type		PPI only.
Return Address	**Location**	This must be on the back of the envelope and meet standard location and formatting [48] requirements.
	Prefix	'If undelivered or subject to redirection, please return to :'
	Content	Full Postal Address File (PAF®) Address [49] (Prefixed by the Local Authority Duty or Department reference).

3. DNR – Specific Attributes

Specific attributes for Do Not Redirect include Chevrons, a trademark and text. These are defined in the following table and illustrated in Figure 44 to Figure 47.

Component		Value
Chevrons	**Dimensions & Colour**	 • The chevrons must be 10mm plus or minus 2mm in length, height, & spacing, and must be set at an angle of 45°. • The chevrons must be printed using Pantone 334 Green (Coated or Uncoated). • Only full chevrons must be printed.

[47] Maximum size is Letter format.
[48] The Return Address may be printed using Pantone 334 Green
[49] This could be the Local Authority address or the address of an authorised agent of the Local Authority.

Component		Value
	Letter Front Chevrons	• **Top Edge** – Chevrons must be printed from the top left corner to 75mm in from the right edge. i.e. the chevrons must not extend into the Indicia area. • **Left Edge** – Chevrons must be printed from the bottom left corner to the top left corner. • **Bottom Edge** – Chevrons must be printed from the bottom left corner to the Route Codemark Clear Zone. i.e. stopping 130mm from the bottom right corner.
	Letter Back Chevrons	• **Top Edge** – No Chevrons are required • **Left Edge –** Chevrons must be printed from the bottom left corner to the top left corner. • **Bottom –** Chevrons must be printed from the bottom left corner to the bottom right corner.
DNR Mark	**Design**	DNR do not redirect ◀◀◀™ • The overall length of DNR Mark must be 68mm along its top edge and 61.5mm along on its bottom edge, and be 6.5mm high. • The 'DNR' Box at the beginning of the Mark must be 16mm long.
	Formatting	• The 'DNR text' must be printed using 16.5pt Arial font. • The 'do not redirect' text must be printed using 12pt Arial Bold font. • The chevron symbols must be printed using Wingdings 3 (◀ - character 124) 12pt bold. • The final element is superscript 'TM' characters that must be printed using 12pt Arial Bold font. • The mark must be printed using Pantone 334 Green (Coated or Uncoated).
	Front Location	The mark must be in the top left corner and inset by 1mm from the top and left chevrons (See Figure 44 & Figure 45).
	Back Location	The mark must be in the bottom left corner and inset by 1mm from the bottom and left chevrons (See Figure 46 & Figure 47)
DNR Text	**Content**	• DO NOT REDIRECT – RETURN TO SENDER ◀◀◀
	Structure & Format	• This DNR text must be printed as a single line of text. • The text must be printed using Arial 16pt Bold, CAPITALS that are left justified. • The symbols must be printed using Wingdings 3 (◀ - character 124). • The text must be printed on 1 line. • The text must be printed using Pantone 334 Green (Coated or Uncoated).
	Location	The text must be located beneath the DNR Mark, above the Delivery Address block and left justified as illustrated Figure 44 & Figure 45.

4. DNR - Figures

Figure 44 – DNR – DSA DL Letter front (not to scale)

Figure 45 – DNR – DSA C5 Letter front (not to scale)

Figure 46 – DNR – DL Letter back (not to scale)

Figure 47 – DNR – C5 Letter back (not to scale)