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# QR Code Proof Before Printing: Approve Decode and Destination

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## Executive Summary

A QR code proof before printing answers two different questions, and most approval emails answer only one. The first is whether the printed pattern decodes. The second is whether the decoded address arrives at the intended live page, kept alive by a named owner for the life of the run. This report separates the two into a **two-part sign-off sheet** tied to one artwork revision and one physical proof, with a rule for who fixes what when either part fails.

On the pattern side, the geometry is checkable arithmetic. DENSO WAVE, the originator of QR Code, states that the symbol needs a four-module margin on every side (www.qrcode.com), and that versions run from 21 × 21 modules up to 177 × 177 modules (www.qrcode.com), adding four modules per side with each version (www.qrcode.com). For a standard symbol of version v, the printed width including margin is (21 + 4(v-1) + 8) times the module width. DENSO's worked example turns a version 3 symbol (29 modules) with 0.254 mm modules into a 9.398 mm square once the margin is included (www.qrcode.com).

On the physical side, printers and vendors agree on the shape of the test but not on one number. A printer sets 0.8 inch for cards (v2.4over4.com), a college guide sets one inch for up-close pieces (media.montgomerycollege.edu), and a QR vendor says never below about 2 cm (qrisland.com). These are local rules, not standards. Printers distinguish an on-screen preview (www.4over4.com) from a hard-copy proof printed on the final stock (www.4over4.com), and one notes that coatings are hard to simulate (www.johnsbyrne.com).

On the destination side, the encoded address and the account behind it decide lifespan. One vendor states that its codes do not expire on their own (bitly.com), while another documents that dynamic codes are deactivated when a subscription ends (support.scanova.io). Policies differ by provider, so the sheet records the owner and the answer. A scan that opens an expired promotion is a failure even when the graphic decodes.

The decision rule is simple. Approve when both parts pass on the final revision. Request an **artwork correction** when the pattern, margin, scale or contrast fails. Request a **destination or redirect change** when the pattern decodes to a wrong or stale page. Request a **physical proof** when the finish, material or distance has not been tested. This is design production guidance, not a platform ranking or a scan-performance guarantee.

## Introduction and Background

A printed QR code can look finished long before it has been tested. A box insert, event card or sign can pass visual review and a quick screen scan, and still disappoint in a customer's hand. The causes sit in two places. Some live in the artwork and print (module size, margin, contrast, finish). Others live online (the redirect, the account, the landing page). Treating them as one "QR check" hides who owns the fix.

This report is written for e-commerce marketing and operations leads who commission package inserts, SaaS event marketers who buy printed cards and signs, and agency account managers who review recurring print artwork. All three approve work they did not draw, pointing at a destination managed by someone else. Each faces one decision: approve this delivered design for this run, request an artwork correction, request a destination or redirect change, or require a physical proof first.

The technical anchor is DENSO WAVE's public documentation. QR Code is established as an ISO/IEC 18004 standard (www.qrcode.com). The ISO catalogue lists a fourth edition published in 2024 whose scope includes error correction rules, a reference decoding algorithm and production quality requirements (www.iso.org). The standard text is paywalled, so this report relies on DENSO's explanations and on printers' and vendors' published advice, labelled as such.

The margin rule has also travelled outside engineering. A 2020 article in the Italian art-and-museum journal Bollettino Telematico dell'Arte (ISSN 1127-4883, issue 901, dated 10 December 2020) (www.bta.it) describes the margin as a white area (www.bta.it) that is an integral part of the total area of the QR code (www.bta.it), with a footnote to DENSO's code-area page. The page lists submission on 20 July 2020 and acceptance on 22 September 2020 (www.bta.it). It relies on one technical source, so it shows how the rule is explained rather than independently confirming it, and nothing is inferred about peer review beyond those editorial dates.

The rules here apply to the standard QR Code form discussed by DENSO WAVE, not to every two-dimensional code, retail barcode compliance, payment codes or packaging engineering. Artwork production and revision are one responsibility, but QR hosting, scan tracking, marketing strategy and scan-performance guarantees are separate responsibilities, and the sign-off sheet keeps them separate.

## Separating Decode, Destination and Proof Approval

### Three approvals, three kinds of evidence

Three different things get approved, and each has its own evidence.

- **Decode approval** asks whether the printed pattern resolves to the exact encoded string on the intended devices. Evidence is a scan result tied to a proof ID.

- **Destination approval** asks whether the decoded address reaches the right, live page today and for the required lifespan. Evidence is the observed final URL, the redirect chain and the account owner.
- **Proof approval** asks whether the physical object (actual stock, finish and size) behaves like the approved artwork. Evidence is a hard-copy proof scanned in realistic conditions.

### What a screen scan does and does not prove

A printer's FAQ recommends scanning from the design file on screen with several phones and requesting a hard-copy proof for the final check (v2.4over4.com). The limit is physical. A printer notes that a soft proof can often be insufficient for ensuring colour consistency (www.johnsbyrne.com), and that coatings and gloss variances are hard to simulate (www.johnsbyrne.com). A backlit screen has no glare or paper texture, so a screen scan is not evidence that a coated insert scans at the intended distance.

### Static and dynamic: who can fix a wrong destination

Every QR code encodes a string. If that string is the final page address, the code is static, and Bitly's guide says static codes lock one destination into the pixel pattern (bitly.com). If the string is a redirect address the provider can repoint, the code is dynamic, keeping the printed code stable while the destination stays editable (bitly.com). So a redirect owner can repoint a dynamic code, while a static code with a wrong or dead address needs a restored page or a reprint, because static breaks if the URL changes (bitly.com).

## Part A: Approving the Pattern

### Record the payload and the symbol

The first record in Part A is the **encoded payload**, character for character, copied from the generator and compared with the expected URL. Payload length drives the symbol version, and the version drives the module count. DENSO's version page gives the range from Version 1 (21 × 21 modules) to Version 40 (177 × 177 modules) (www.qrcode.com), and its own example places 100 numeric digits at Version 3 (29 x 29 modules) (www.qrcode.com). A long tracking string forces a higher version, so a payload that grew between design rounds is a cue to recheck module width, not only the destination.

### Calculate the footprint including the margin

DENSO states that a QR Code requires a four-module wide margin at all sides of a symbol (www.qrcode.com), and defines the margin as a clear area where nothing is printed (www.qrcode.com). Once the symbol version and module size are determined, the size of the symbol is determined. Its worked example gives Version 3 as 29 modules and a required area of 9.398 mm on each side with the margin (www.qrcode.com).

For a standard QR Code of version v, the symbol has N = 21 + 4(v-1) modules per side, and with a four-module margin on each side the total width is W = (N + 8) × module width. For DENSO's example, 37 × 0.254 mm is 9.398 mm, reproducing the published figure.

*Table 1* below applies the formula to a fixed 20 mm total width (module width needed) and to a fixed 0.5 mm module (total width produced). It is illustrative arithmetic, not a recommendation or an observed phone-scan result. The 0.5 mm column reflects a vendor's heuristic of at least 0.5 mm per module for codes up to 53

modules wide, from its own print tests (qrisland.com).

| Version | Modules per side (N) | Modules incl. margin (N + 8) | Module width if total is 20 mm | Total width if module is 0.5 mm |
|---|---|---|---|---|
| 1 | 21 | 29 | 0.690 mm | 14.5 mm |
| 2 | 25 | 33 | 0.606 mm | 16.5 mm |
| 3 | 29 | 37 | 0.541 mm | 18.5 mm |
| 4 | 33 | 41 | 0.488 mm | 20.5 mm |
| 5 | 37 | 45 | 0.444 mm | 22.5 mm |
| 6 | 41 | 49 | 0.408 mm | 24.5 mm |
| 7 | 45 | 53 | 0.377 mm | 26.5 mm |
| 10 | 57 | 65 | 0.308 mm | 32.5 mm |
| 40 | 177 | 185 | 0.108 mm | 92.5 mm |

The table shows why "make it 20 mm" is an incomplete instruction. The same 20 mm box gives a version 3 symbol about 0.54 mm modules and a version 6 symbol about 0.41 mm modules, a 25 percent reduction. DENSO explains the stakes: the larger the module is, the more stable and easier to read (www.qrcode.com), and symbols should be printed as large as possible within the available area (www.qrcode.com).

## Printer dots, module width and image pixels are different units

A **module** is one dark or light square of the code. A **printer dot** is the smallest mark the device makes. A **raster pixel** is a unit of the image file. Printivity defines PPI (pixels per inch) as the digital image resolution and DPI (dots per inch) as the print resolution (www.printivity.com).

DENSO's module guidance concerns dots: it recommends for stable operations that each module is made up of 4 or more dots (www.qrcode.com). At 600 dpi four dots is about 0.17 mm, and at 300 dpi about 0.34 mm (arithmetic from 25.4 mm per inch). DENSO's FAQ puts the minimum printable module of a common laser printer at about 0.17 mm (www.qrcode.com), which is a printing limit, not a smartphone threshold. Each scanner has its own readable module size limit (www.qrcode.com).

The raster problem is separate. A printer warns that a 300 by 300 pixel PNG stretched to fit a print layout softens module edges (v2.4over4.com). As arithmetic, that image stretched across 3 inches is 100 PPI, a third of the 300 dpi a campus print shop recommends as a minimum (printshop.kennesaw.edu). One sticker printer notes that changing the DPI value in an editing program will not fix the issue (help.makestickers.com). The approval rule is to request a vector placement (SVG, EPS or PDF).

### Check placement, trim and the margin in the actual layout

The margin is routinely lost in layout, not in generation. DENSO says that when letters or pictures are placed around a QR Code, the required margin cannot be secured (www.qrcode.com), and that a code made smaller in an image tool has every module distorted (www.qrcode.com). A vendor's print guide says the quiet zone should not be cropped out (mosaicqr.com).

Print geometry adds a second margin that is easy to confuse with the first. A printer defines the bleed line as 0.125 inches outside the finished size on small-format work (www.4over4.com), and the safety line as usually 0.125 inches in from trim and ideally 0.25 inches on text-heavy pieces (www.4over4.com). A card specification from one printer says to keep everything inside a 3.25 by 1.75 inch safe zone and states that it holds the code and its quiet zone (v2.4over4.com), while another asks for key elements at least 3 mm from the cut edge (aura-print.com). The approval rule: the whole footprint, margin included, sits inside the printer's own safe zone, and the proof record names whose rule was used.

### Contrast, inversion, colour and decoration

DENSO recommends printing QR Codes in black on a white background (www.qrcode.com). Overlaid text or pictures make the contrast between bright and dark areas indistinct, producing a code that is difficult or impossible to read (www.qrcode.com). A printer's rule is dark on light, never light on dark, with the caution that many readers handle an inverted code while plenty do not (v2.4over4.com). A greyscale preview in design software is a cheap pre-check another printer suggests (aura-print.com).

WCAG 2.2 sets 4.5:1 for text contrast (www.w3.org) and 3:1 against adjacent colours for graphics needed to understand content (www.w3.org). Neither criterion mentions QR codes, so the ratios give the designer a shared vocabulary, not a decoding specification. WCAG's principle that non-text content needs a text alternative (www.w3.org) supports a print habit: a college's QR guide says to always place a URL or shortened URL beneath the code (media.montgomerycollege.edu).

### Error correction and logos

DENSO offers four error correction levels chosen according to the operating environment (www.qrcode.com). Level M, at 15 percent, is the one most frequently selected (www.qrcode.com), and Levels Q or H may be selected where a code gets dirty (www.qrcode.com). The trade-off is size: a higher level improves capability but also increases code size (www.qrcode.com). DENSO publishes no safe percentage of the pattern that a logo may cover, so none is offered; the sheet asks whether a logo sits inside the pattern and, if so, requires a proof scan.

## Part B: Approving the Destination

### Expected versus observed

Part B compares the **expected destination** (domain, path, what the page must show) with the **observed destination** (the final URL after every redirect, plus what the page shows). A vendor checklist recommends opening the destination URL directly in a mobile browser before scanning the code (www.qr-code-

generator.com). The "matches the campaign intent" clause is where most of the added value sits: a code can decode flawlessly and land on an expired promotion, a retired product or a staging page, so the sheet gives the destination its own pass/fail line.

### Redirects: record the chain and the type

MDN notes that, besides a small performance hit, users rarely notice a redirection (developer.mozilla.org), so a chain can change silently. MDN adds that permanent redirects are meant to last forever (developer.mozilla.org) and that redirection loops completely break the user experience (developer.mozilla.org). RFC 9110 defines a 301 response as assigning a new permanent URI (www.rfc-editor.org) and a 302 response as temporary, where the client ought to continue to use the target URI for future requests (www.rfc-editor.org). For approval, the practical record is the chain (printed address, each hop, final page) and who controls each hop.

### What the phone shows before opening

Apple's support page describes framing the code and then tapping the link to open the content (support.apple.com), and Google's Pixel help says the camera shows a bubble or link on the screen (support.google.com). The FTC notes that many QR readers preview the link they will send you to (consumer.ftc.gov) and advises inspecting the URL before opening it (consumer.ftc.gov). The reviewer records the domain displayed in the preview and runs at least one test with the phone's built-in scanner, which the UK National Cyber Security Centre recommends over downloaded apps (www.ncsc.gov.uk).

### Owner and lifespan

Lifespan is a property of accounts, domains and pages, not of ink.

- **One vendor's FAQ** says its QR Codes do not expire on their own (bitly.com), that an expiry date can be set during or after creation (bitly.com), that a code can be redirected to a new URL at any time (bitly.com), and that deleting the link behind it turns it off (bitly.com).
- **Another vendor's support article** says that once a trial or paid subscription ends, all dynamic QR codes are automatically deactivated (support.scanova.io), that they stop redirecting (support.scanova.io), and that its static codes remain functional without an active subscription (support.scanova.io).
- **A third vendor** says trial-expired dynamic codes point to a service page rather than the original destination (support.qr-code-generator.com), and its testing checklist lists account lapses among the events that can turn dynamic codes into dead ends (www.qr-code-generator.com).

These are vendors describing their own products; they do not support a general statement about "paid QR codes", and no cancellation terms or plan entitlements are asserted. The buyer asks the actual provider and records the answer and the account holder. One institution's answer is to use only services approved by its IT office (media.montgomerycollege.edu) and not create a new account with a named provider (media.montgomerycollege.edu); that is an enterprise rule, not a requirement for every business.

Bitly's guide says a "forever" code still fails if you delete the website, PDF or page it points to (bitly.com), and advises hosting the destination on a URL you control long term (bitly.com). Where the printed address uses a domain, its registration is part of the lifespan. ICANN's recovery policy requires registrars to notify the registered name holder of an expiration at least two times (www.icann.org) and to permit renewal of an expired registration (www.icann.org). That applies to generic top-level domains, so the sheet names the person who receives renewal notices.

# Physical Proof Testing

## What a hard-copy proof is

One printer describes its hard-copy proof as printing on the same stock as the final run (www.4over4.com). Another defines a hard proof as a physical copy of your print project (www.qinprinting.com), noting that a PDF proof shows layout, font and artwork but not the physical piece (www.qinprinting.com). Adobe's help says inkjet printers of 600 dpi or higher produce reliable hard proofs (helpx.adobe.com), though an office proof will not reproduce a press finish.

The evidence ladder has three tiers:

- **Screen scan:** checks the file.
- **Printout at final size with scaling off:** checks the size, and a vendor says to measure the code with a ruler (qrisland.com).
- **Printer-made hard-copy proof on the real stock:** checks the object.

Only the last speaks to actual material and finish, so the sheet records which tier produced each scan.

## Finish, material and surface

- **Gloss and coatings:** one printer says high-gloss finishes can throw a hotspot across the code under bright light (www.4over4.com). Another observes that lamination itself is not normally an issue, though gloss lamination can occasionally create glare at certain viewing angles (aura-print.com).
- **Layout fixes:** put the code on an uncoated or matte panel when the front is glossy (www.4over4.com), and avoid spot gloss directly on the code (www.vistaprint.co.nz). One printer does not recommend foil or other special finishes directly over a QR code (www.4over4.com).
- **Curved surfaces:** a print retailer's help page says the curve can distort a QR code (www.vistaprint.co.nz), while a QR vendor says codes do get scanned on curved surfaces but sometimes you have to adjust (help.qrcodechimp.com).

A vendor lists printed size, printer, paper type, lighting and scanning device as the variables scannability depends on (mosaicqr.com).

## Devices, apps, light and distance

Named devices make a test repeatable. A vendor suggests testing at least one iPhone, one Android phone and an older model (www.qr-code-generator.com), plus two or three popular third-party scanning apps (www.qr-code-generator.com). One reason is that the two platforms use different scanning algorithms and

tolerances (mosaicqr.com); another is that older phones and dedicated scanners may have lower success rates (mosaicqr.com). Google's help points to lighting and glare as scan factors (support.google.com) and says the entire code must show on screen (support.google.com), so a code too near a fold or edge can fail to frame.

On distance, vendors offer rules of thumb: about ten times the width of the code (euqr.eu), though printers vary in the divisor they use. These are heuristics, not standards, and DENSO frames limits as module size against scanner resolution rather than a distance ratio. The sheet records the intended viewing distance and the device used there.

A handful of device checks documents what happened to those devices on that day. It is not statistically proven reliability and not an accessibility assessment for all users.

## Data Analysis and Evidence

### Stated minimum sizes are local rules

*Table 2* lines up the size figures opened for this report, with metric conversions.

| Source (type) | Stated figure | Metric equivalent | Status |
|---|---|---|---|
| DENSO WAVE FAQ (originator) | Minimum printable module of a common laser printer about 0.17 mm | 0.17 mm module | Printing capability, not a smartphone scan threshold |
| QR Island (vendor guide) | At least 0.5 mm per module for codes up to 53 modules wide (qrisland.com) | 0.5 mm module | Vendor test-based heuristic |
| Vistaprint help centre (print retailer) | At least 2 cm x 2 cm (www.vistaprint.co.nz) | 20 mm | Retailer guidance |
| QR Island (vendor guide) | Never below about 2 cm (qrisland.com) | about 20 mm | Vendor guidance |
| EUQR (vendor guide) | About 2 by 2 centimetres for a code with few modules at reading distance (euqr.eu) | about 20 mm | Vendor guidance, conditional on module count |
| 4OVER4 card guide (printer) | 0.8 inch square or larger on a card (v2.4over4.com) | 20.3 mm | Printer guidance, card format |
| Montgomery College guide (institution) | Not smaller than one inch by one inch for up-close printed materials (media.montgomerycollege.edu) | 25.4 mm | Institution-specific rule |

The figures cluster near 20 mm, with one institutional rule at 25.4 mm. The quoted sentences do not all say whether the margin is inside the figure, and several are conditioned on module count, format or distance. Table 1 shows why the condition matters. EUQR's guide restates DENSO's four-module rule (euqr.eu), so the vendor sources are partly repetitions of one technical origin. No source opened here offers a universal minimum for every code, finish and distance.

### Numbers a reader can reproduce

- **Illustrative alternative:** 37 modules at an assumed 0.4 mm module is 14.8 mm; 20 mm divided by 37 is about 0.541 mm per module. Neither is a recommendation.
- **Print geometry:** 0.125 inch is 3.175 mm. For a printer whose safety line is 0.125 inch inside trim, the footprint including a 2.0 mm margin (4 modules at 0.5 mm) must start at or beyond 3.175 mm from the trim edge.
- **Error correction:** Level M is the most frequently selected; the percentage describes recovery capacity, not permission to cover that share of the pattern.

### What is not established

No source opened here supplies an industry scan-success percentage, an optimal logo-cover percentage, a conversion uplift or a reprint-cost benchmark, and none is offered. Competing guides already provide size tables and test sheets; the sign-off sheet adds organisation, fixing evidence to one revision and one proof and routing each failure to an owner.

## Worked Examples (Hypothetical)

The scenarios below are fictional and use the Table 1 arithmetic.

### (Hypothetical Example) Clipped margin on a package insert

A designer places a version 3 symbol (29 modules) at 0.5 mm modules, so the symbol is 14.5 mm and the footprint with margin is 18.5 mm. A coloured band runs behind the lower edge, and the symbol sits 1.0 mm from the band. The required margin is 4 modules, or 2.0 mm at this module width, so the band intrudes by 1.0 mm. DENSO states the margin requirement on all sides. A screen scan may pass because that phone tolerates the band, which is why the printed proof matters.

- **Verdict:** artwork correction.
- **Owner:** the designer.
- **Fix:** move the symbol or remove the band so 2.0 mm stays clear, within the printer's safe zone.
- **Retest:** a new proof of the new revision; the old scan result is discarded.

### (Hypothetical Example) Dense payload in too-small artwork

A marketer appends tracking parameters to the destination for an event card, and the generator now reports version 6 (41 modules) instead of version 3. The artwork box stays at 20 mm total width, so modules shrink from about 0.54 mm to about 0.41 mm. That falls below the 0.5 mm vendor heuristic noted under Table 1, which is not a standard but is a reason to test. Keeping version 6 at 0.5 mm modules would need a 24.5 mm footprint.

Two fixes have different owners. Enlarging the footprint to 24.5 mm is an artwork correction, owned by the designer. Shortening the payload by pointing the code at a short redirect address is a destination change, owned by whoever controls the redirect account, and it can restore version 3 geometry. Raising the error correction level is not a free alternative, since a higher level increases code size.

### (Hypothetical Example) Successful scan, wrong promotion

A spring insert encodes a static link to a promotion page. In autumn the page is repointed to a different offer. The code scans on every test device, the proof passes Part A, and every customer lands on the autumn page. Because the pattern is static, the page owner must restore a page at the printed address or redirect it to the right current page. A dynamic code would have let the redirect owner repoint it, provided the account is active.

- **Verdict:** destination change.
- **Owner:** the web or redirect owner, not the designer.
- **Lesson:** a pass on Part A is not a pass on Part B, the case a decode-only checklist misses.

## The Two-Part Sign-Off Sheet and Questions to Ask

### Sign-off sheet

Copy this into the approval thread or job ticket. One sheet covers one artwork revision and one proof. If the artwork changes after approval, a new sheet is needed, because every Part A line depends on the file.

```
QR PRINT RELEASE SIGN-OFF (one sheet per artwork revision)

IDENTIFIERS
Artwork ID + revision: _____________   Proof ID (tier: screen / 100% printout / hard-copy): _____________
Print run / SKU / event: _____________   Approver: _____________   Date: _____________

PART A. THE PATTERN DECODES
A1 Encoded payload (exact string): _____________
A2 Symbol version / modules per side (N): _______ / _______   Error correction level: _______
A3 Module width (mm): _______   Total printed width incl. 4-module margin, (N+8) x module (mm): _______
A4 Measured on proof (ruler): margin clear on all four sides?  Y / N   Inside printer safe zone?  Y / N
A5 Placement: vector file? Y / N   Scaled/cropped/distorted? Y / N   Overlay or logo in pattern? Y / N
A6 Dark on light, contrast checked (greyscale preview)?  Y / N
A7 Actual substrate + finish (gloss / matte / lamination / foil / emboss / curved): _____________
A8 Printed fallback URL or text next to code?  Y / N   Matches payload domain?  Y / N
A9 Test environment: device + camera/app + OS (min. 2 phones, 1 older):
   _____________ ; _____________ ; _____________
   Light: _________  Distance (intended viewing): _________  Angle: _________
A10 DECODE RESULT per device (decoded string identical to A1?): _____________   PASS / FAIL
    Corrective owner if FAIL (designer / printer): _____________

PART B. THE DESTINATION IS RIGHT AND ALIVE
B1 Expected destination (domain / path / what the page must show): _____________
B2 Observed redirect chain (printed address -> each hop -> final URL; 301/302): _____________
B3 Observed final page (what it shows today): _____________
B4 Matches intent and current campaign? Y / N   Loads on mobile? Y / N
B5 Preview shown by phone camera (domain displayed): _____________
B6 Static or dynamic code?  _______   Redirect / account owner (name + role): _____________
B7 Provider policy on lapse, expiry, deletion (asked and answered, quote or link): _____________
B8 Intended lifespan + review date: _____________   Domain/page owner + renewal contact: _____________
B9 DESTINATION RESULT   PASS / FAIL
    Corrective owner if FAIL (redirect owner / web owner / page owner): _____________
```

```
RELEASE DECISION
[ ] Approve for run   [ ] Artwork correction   [ ] Destination/redirect change   [ ] Physical proof required first
Retest after correction (new revision + new proof ID): _____   Evidence stored at: _____
```

The sheet encodes three rules:

- Part A and Part B each carry their own result line.
- Every line points to a revision and a proof ID.
- Each failure carries a named corrective owner.

## Who fixes what

*Table 3* summarises the routing, the buyer-readable version of the decision rule.

| Observed result | Likely location of the fault | Corrective owner | Typical action | Retest |
|---|---|---|---|---|
| Does not decode on proof; margin clipped or overlaid | Artwork or layout | Designer | Restore 4-module margin; move or remove overlay | New revision, new proof, Part A again |
| Decodes inconsistently; modules look soft | Raster scaling or small modules | Designer, with printer | Swap in vector; enlarge or shorten payload | New proof at final size |
| Decodes on screen, fails on coated proof | Finish glare | Designer and printer | Matte panel; remove spot gloss over code | Hard-copy proof on final stock |
| Decodes, lands on expired or wrong page | Destination or redirect | Redirect or page owner | Repoint dynamic code or restore page; reprint if static and unfixable | Part B on live page |
| Decodes, then fails weeks later | Account, expiry or domain lapse | Account and domain owner | Reactivate; renew; confirm policy in writing | Part B with new review date |
| Decodes but preview shows an unfamiliar domain | Redirect domain choice (consumer.ftc.gov) | Redirect owner with marketer | Use a recognisable owned domain | Part B, record B5 |

The designer fixes a dense or unreadable pattern; the redirect or page owner fixes a reachable but wrong destination. A reprint is forced only when the fault is in ink, or when a static code points at an address nobody can restore.

## Questions for the printer and the QR provider

- **Printer:** Which proof tiers do you offer, and is the hard-copy proof printed on the final stock and finish?
- **Printer:** What are your bleed and safety distances, and does your safe zone include the code's margin?
- **Printer:** Does the finish add glare, can the code sit on a matte panel, and will you flag a raster QR image?
- **Provider:** Is the code static or dynamic, and what happens if the subscription ends, a trial lapses or the link is deleted?

- **Internal:** Who receives renewal notices for the domain in the printed address?

## Implications and Future Directions

For buyers, the implication is a change of ownership in the approval step: the reviewer who signs a design is rarely the person who controls the redirect or web page, and a named corrective owner per failure makes that mismatch visible. Recurring print artwork amplifies the point: each refresh can change the payload, version and module width, so lines A1 to A3 should be re-run each cycle rather than inherited. Checks also recur after launch; one vendor suggests a 15-minute monthly recheck for codes that stay in market (www.qr-code-generator.com).

Published advice from printers and vendors converges on vector placement, matte panels, proof on real stock and more than one device. The ISO catalogue lists the 2024 edition of ISO/IEC 18004 as published and flags it as an International Standard to be revised (www.iso.org). Buyers who need grading against its production quality requirements would need the standard itself or a specialist verifier.

Uncertainty remains. Whether buyers will adopt a combined release record rather than rely on a printer's existing checks is untested, and no adoption data are presented. Security-sensitive uses, retail barcodes and payment flows sit outside this sheet and need specialist requirements. Artwork revisions can be handled by a design provider, while the redirect account, hosting and scan analytics stay with whoever owns the destination.

## Frequently Asked Questions (FAQs)

### How to check a QR code before printing?

Scan the design file on screen with several phones (v2.4over4.com), print at 100 percent scale and measure the code, then request a hard-copy proof on the final stock (v2.4over4.com). At each step record the decoded string and the final page separately.

### What does a QR code print proofing checklist include?

The sign-off sheet above is the checklist, from payload and footprint to redirect chain, owner and lifespan.

### How to test a QR code before printing?

Use real devices and the built-in scanner (www.ncsc.gov.uk), then add a couple of third-party apps purely as a compatibility check (www.qr-code-generator.com). Test in the lighting and at the distance of the real setting (support.google.com) and open the destination in a mobile browser. Keep the evidence with the proof ID.

### What QR code print size and quality requirements apply?

For a standard QR Code, the verifiable requirement is a four-module margin and a module size that both printer and scanner can resolve. There is no universal minimum in centimetres, and the figures in Table 2 are local rules. Use the Table 1 formula and prove the result on a physical proof.

### Why is a QR code not scanning after printing?

Documented causes, covered in Part A and the finish discussion, include a missing margin, distortion from resizing, indistinct contrast, soft raster edges and finish glare. If the code scans but arrives somewhere unexpected, the cause lies in the destination, not the print.

### Is a dynamic or static QR code better for print?

Neither in general. A static code suits a destination that will never change and needs no scan data; a dynamic code can be repointed but depends on the provider account, whose lapse policy varies by provider.

### What does a QR code design approval process look like?

The designer delivers the revision and Part A evidence, the account manager checks Part B with the redirect owner, a printer-made proof is scanned, and any correction produces a new revision and a new sheet.

### What is a QR code physical print proof?

A physical sample on the actual stock and finish, scanned on named devices in realistic light and at the intended distance. A screen preview is a different object (www.4over4.com).

### Can a permanent QR code be guaranteed?

No source opened here supports a guarantee. Permanence depends on the destination staying live and on the account state, as the vendor lapse policies above show.

## Conclusion

A printed QR code is safe to approve when two separate facts are both true for the final artwork revision and the physical proof: the pattern decodes to the intended string, and that string leads to the right live page for as long as the print run needs. The pattern side is arithmetic and inspection: payload, version, module count, a four-module margin included in the footprint, vector placement, contrast and a finish that does not defeat the camera. The destination side is ownership and evidence: the redirect chain, the observed page, the account policy and the person who keeps it alive.

The decision rule follows.

- **Approve** when Part A and Part B both pass on the same revision.
- **Request an artwork correction** when the pattern, margin, scale or contrast fails.
- **Request a destination or redirect change** when the code decodes to a stale or wrong page.
- **Request a physical proof** when the material, finish or distance has not been tested.

Published size figures are local rules, and no source opened for this report offers a universal minimum, a scan-success percentage or a guarantee of performance. The sheet makes the evidence specific enough that the buyer, designer, printer and destination owner each know what they are signing.

# Source links

Links cited in this article, in order of first appearance. Full addresses are provided for readers using extracted text.


1. https://www.qrcode.com/en/howto/code.html
2. https://www.qrcode.com/en/about/version.html
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THE PUBLISHER

# About Tapflare

Tapflare gives companies an on-demand design and web team for a flat monthly fee.

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Each subscriber has a dedicated project manager who learns the brand, assigns every request to a senior specialist in that kind of work, and reviews the result before it is delivered. Requests are submitted and discussed in the Tapflare portal, each plan includes a daily allotment of design or development time, and the client keeps full ownership of the export and source files.

### What it covers

Graphic design, custom illustration, presentation design, logos and brand guides, video editing and motion graphics, website and mobile-app mockups, and website development, from design mockups to HTML, to drag-and-drop builders or custom code.

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