



# Cassette Printer Technologies

A look at the different  
types



# Overview

It is difficult to print tiny data matrix barcodes onto the ends of plastic tissue cassettes. It is important that the barcode is printed cleanly and accurately. A poorly printed barcode will be difficult to read.

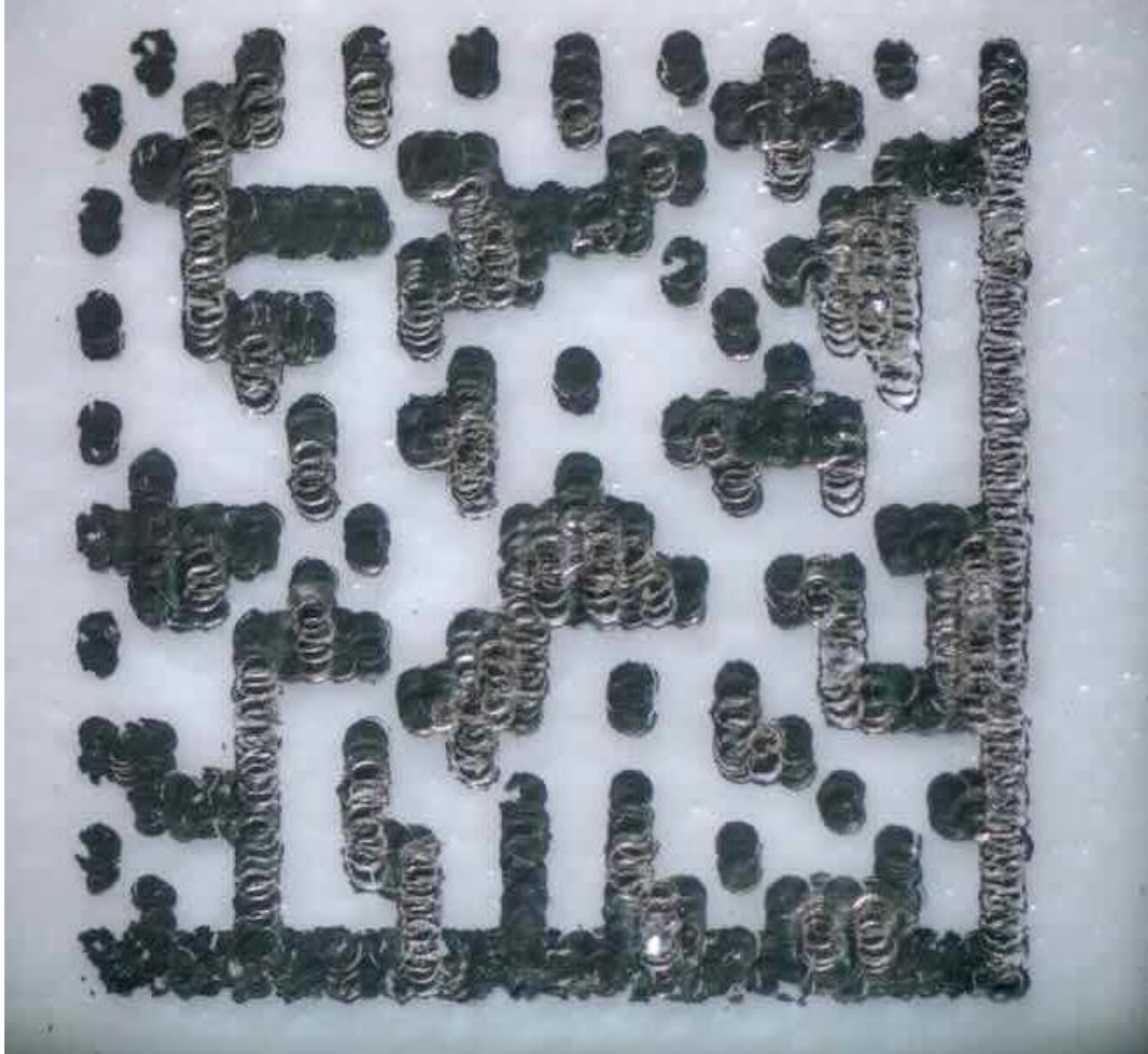
The technology used to print barcodes on the ends of tissue cassettes has evolved over time. Each new technology was an improvement over the previous technology.

- **Dot-matrix impact printer:** Just like the old dot-matrix computer printers, pins impact a ribbon to transfer ink to the cassette
- **Thermal:** Uses a heating element to transfer ink from a ribbon to the cassette
- **Inkjet:** Sprays ink on the cassette
- **Ablation Laser** (General Data AB-series): Uses a laser to blast off black ink from the surface of the cassette
- **Excimer Laser** (General Data PH-series and JBY-series): Uses a laser to darken a transparent film on the surface of the cassette

# Dot Matrix Impact Printer

## Issues

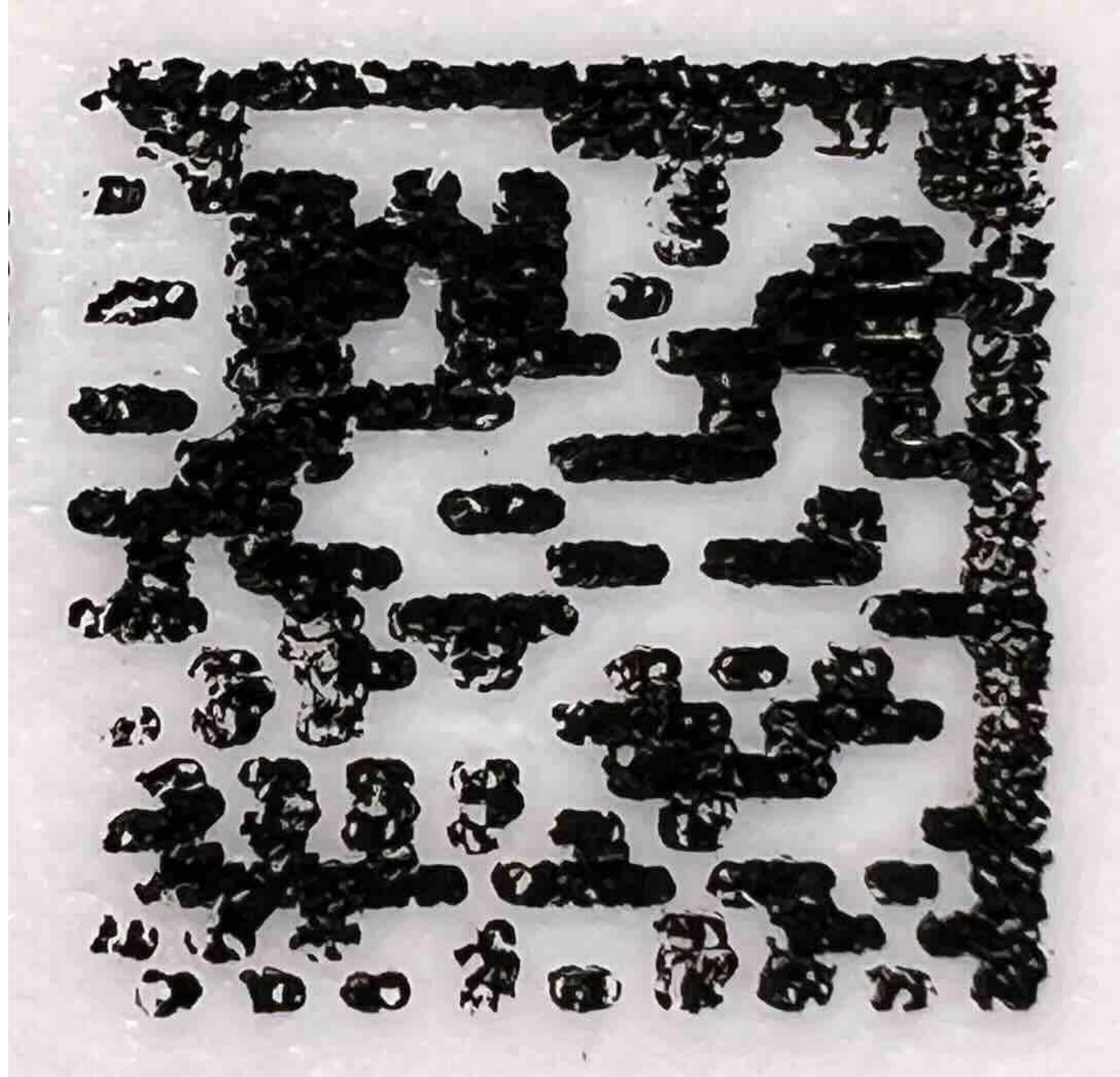
- The pins will wear and chip over time, resulting in poor transfer of ink from the ribbon to the cassette
- The multiple strikes required to fill in large areas can remove the ink from previous strikes
- The round pins do not create square corners or straight edges



# Thermal Printer

## Issues

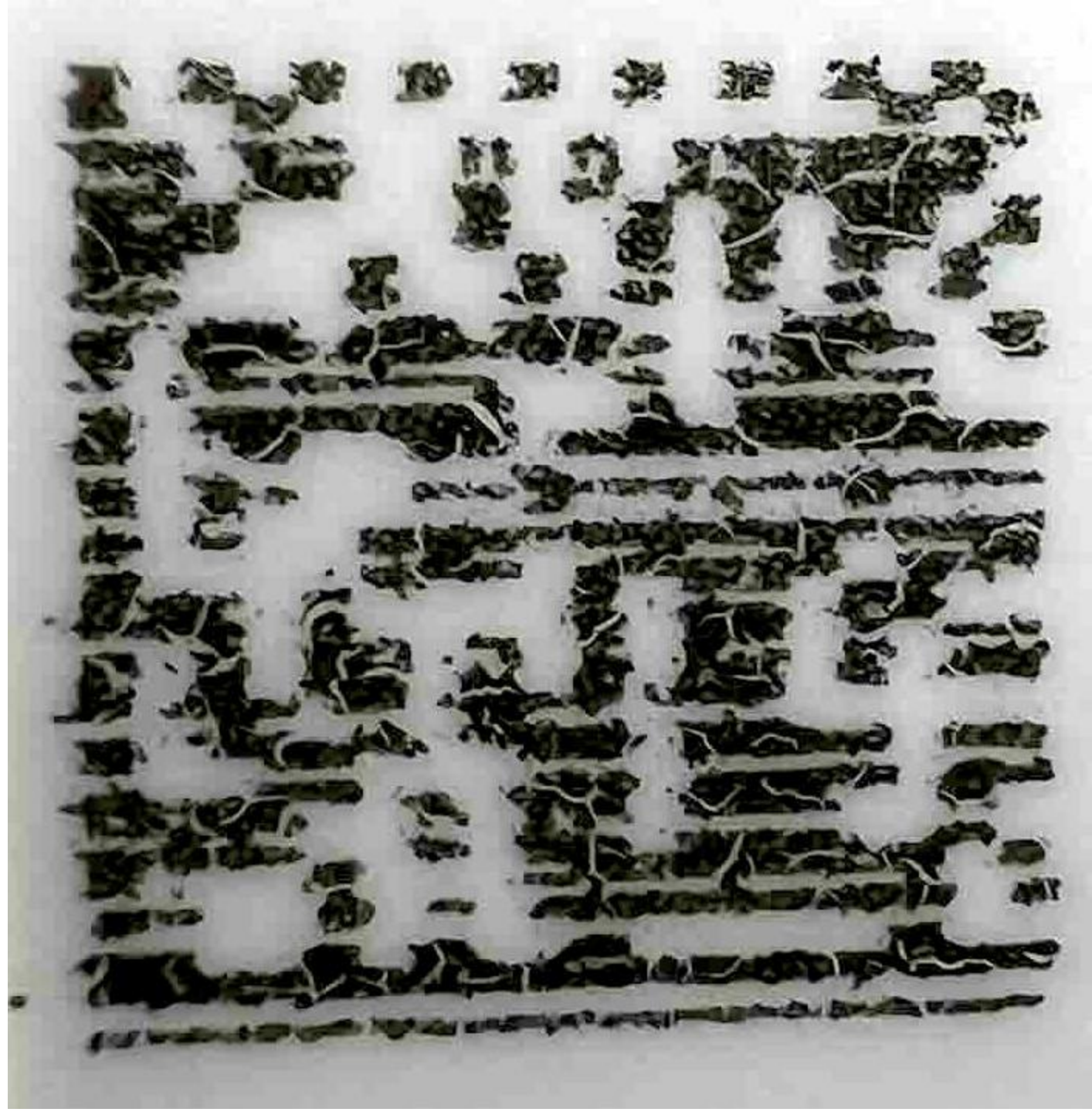
- The ink from the ribbon can have difficulty transferring to the pebbled surface of the cassette



# Inkjet Printer

## Issues

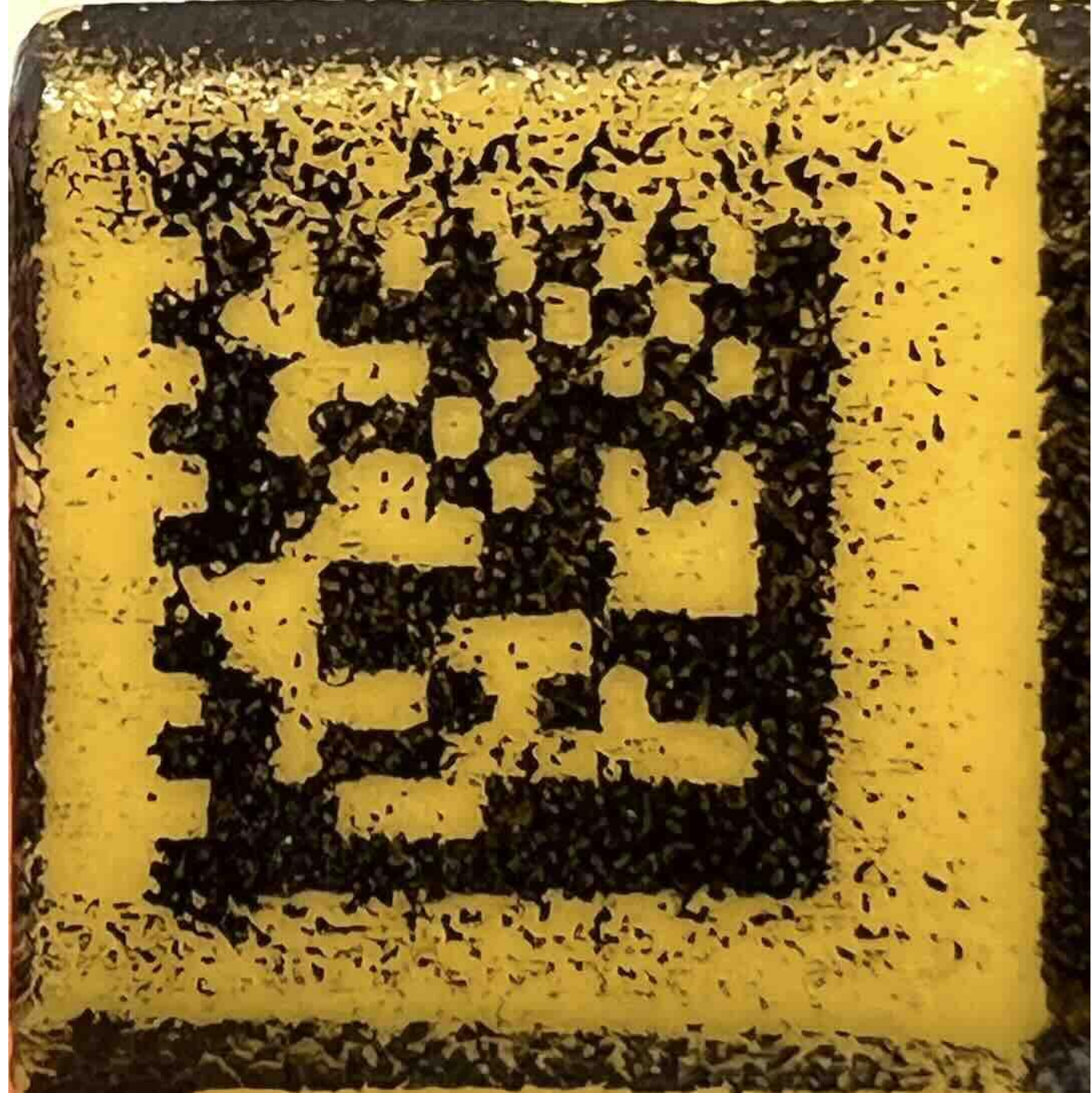
- The jets can clog and create streaks
- The ink can have problems wetting the surface of the cassette, withdrawing from areas that should be filled-in
- The ink can crack when it dries, creating gaps



# Ablation Laser Printer

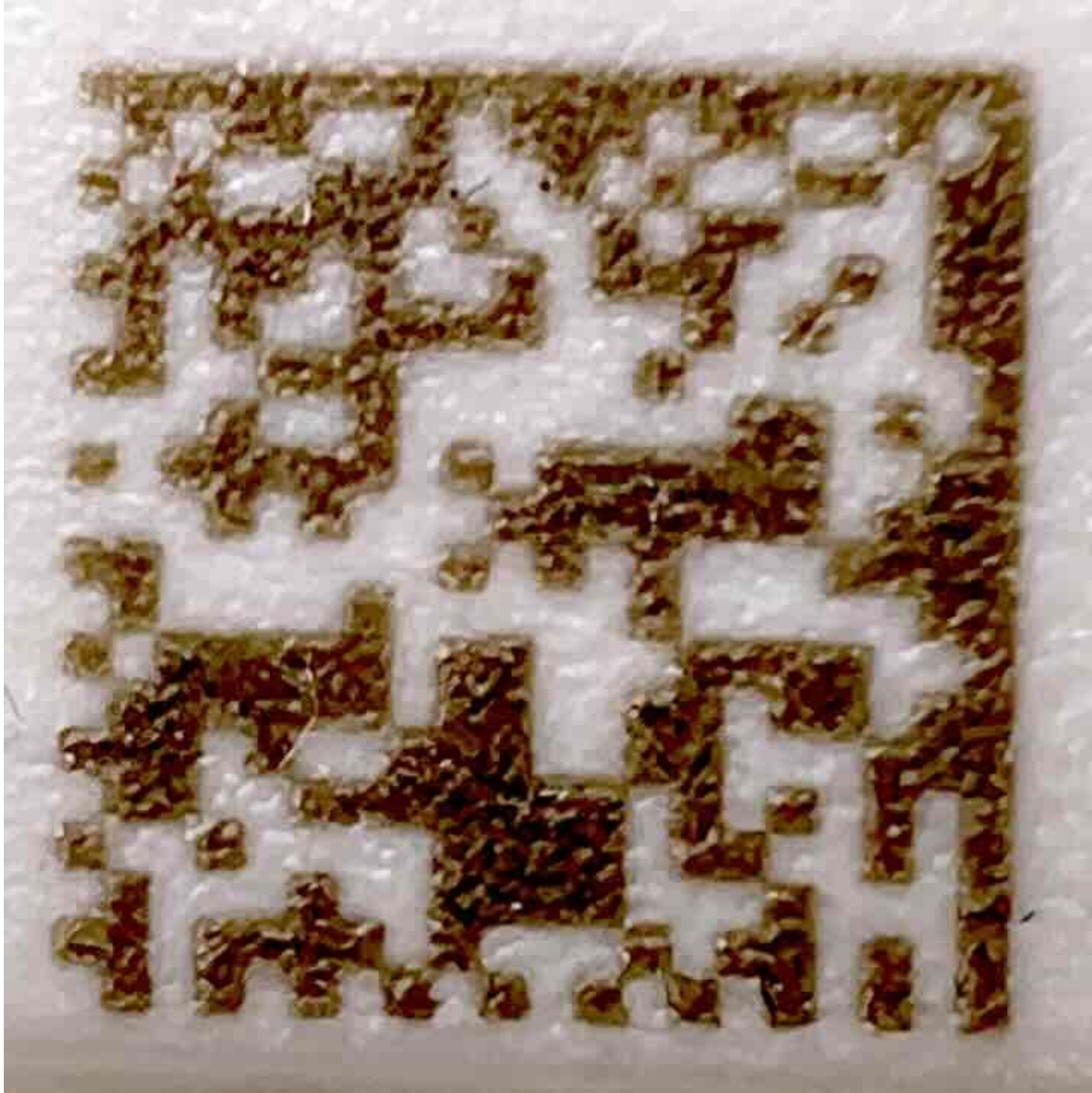
## Issues

- In general, the barcodes produced by this technology are quite good.
- However, if the air filters are not changed regularly, the cloud of black dust created when the laser blasts the ink from the surface of the cassette can fall back onto the cassette, obscuring the barcode and making it difficult to read.



# Eximer Laser Printer

This creates the most reliable and most easily read barcodes of all the technologies



# Links to more stuff...

- This two-minute video is easy to watch and gives a quick overview of the different printer technologies:
  - <https://www.youtube.com/watch?v=NbwzRncLsL0>
- An in-depth white paper on the different printer technologies:
  - <https://www.general-data.com/about/blog/why-laser-best-technology-printing-barcodes-histology-cassettes>
- A video of a laser printer in action:
  - <https://youtu.be/QA8xZLatCwo>





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