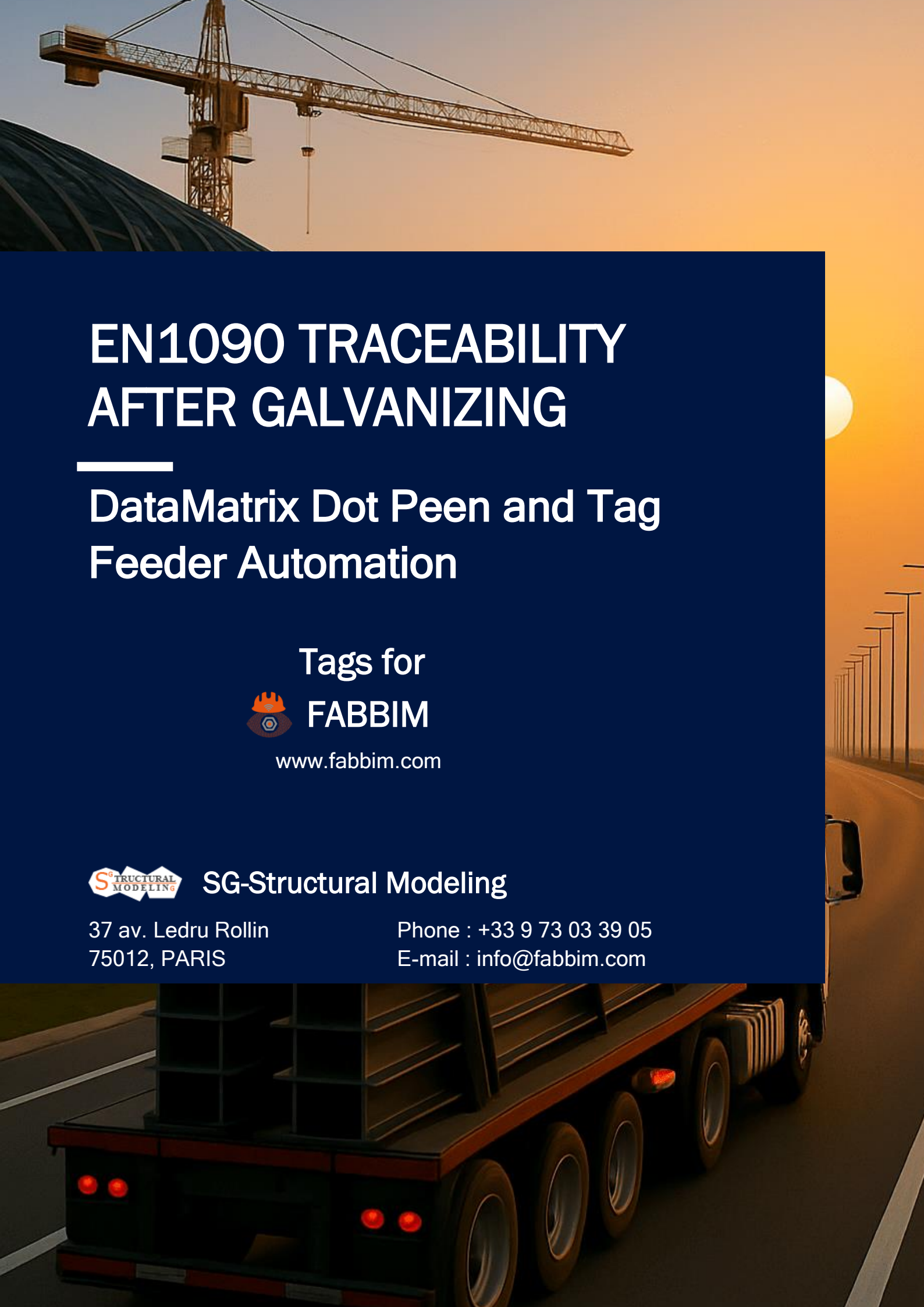




EN1090 TRACEABILITY AFTER GALVANIZING

DataMatrix Dot Peen and Tag Feeder Automation

Tags for



FABBIM

www.fabbim.com



SG-Structural Modeling

37 av. Ledru Rollin
75012, PARIS

Phone : +33 9 73 03 39 05
E-mail : info@fabbim.com

EN1090 Traceability: How to Garantie a Readable DataMatrix After Galvanizing

The Ultimate Industrial Solution: Deep Dot Peen + Metal Tags + Automated Tag Feeder

Steel construction is evolving. Quality requirements, European standards, and site pressure mean that today, traceability of structural components has become a major issue for manufacturers, galvanizers, assemblers, and erection companies.

- identifiable,
- traceable,
- documented,
- associated with material / welding / galvanizing certificates,
- recognizable even after installation.

But how can we maintain reliable identification after galvanizing, after sandblasting, after metallization, after painting, and even after transport and storage?

The answer relies on a 40-year-old mechanical technology, which is now resurfacing as the only modern EN1090-compliant solution:

Deep DOT PEEN DataMatrix marking.

In this complete guide, you will learn:

- Why 99% of marking technologies fail after galvanizing.
- Why deep dot peen is the only truly durable solution.
- How a mechanical DataMatrix works and why it remains readable.
- Why embossers and metal labels are incompatible with EN1090.
- How to mass-produce DataMatrix plates using machines with Tag Feeders.

You will also see how **FABBIM** integrates full digital traceability across the entire process:

fabrication → galvanizing → painting → delivery → installation → geolocation.

This is a complete document intended for professionals: metalworkers, locksmiths, galvanizers, steel fabricators, design offices, logistics teams, and EN1090-certified workshops.

1. EN1090 problem : traceability disappears after galvanization

Hot-dip galvanizing is an essential treatment to protect steel against corrosion for several decades. However, the zinc bath at 450 °C:

- completely covers the room,
- hides all surface markings,
- creates a non-uniform zinc layer,
- visually changes the appearance of the room.

A conventional layer varies between **70 and 150 microns**, sometimes up to **300 microns** on some geometries.

Any surface marking is automatically **flooded, smoothed, or erased**.

WHY DO CONVENTIONAL MARKINGS FAIL?

- Laser Engraving: 100% disappears.
- Paint Print: Burns instantly.
- Metal labels: melt or peel off.
- Chemical etching: invisible after zinc deposition.
- Embossing (relief): embedded in zinc → illegible.

RESULT:

99% of marking methods are incompatible with EN1090 when galvanizing.

2. Only the deep DOT PEEN creates a permanent, 100% galva-proof DataMatrix

The **deep dot peen** is a mechanical marking technology, using a carbide or tungsten tip that strikes the steel to create **craters**.

Unlike other technologies, it is not based on:

- No ink
- No painting
- No surface laser
- No fragile relief like embossing

But on a **permanent deformation of the material**, with a real depth (0.3 to 0.5 mm).

WHY DOES THE DOT PEEN DATAMATRIX STILL WORK AFTER GALVA?

Because:

- Punching creates **pits (cavities)** that are sufficiently wide and deep.
- The zinc flows inside, but does not suppress the contrast.
- The geometry of the point remains detectable by industrial camera.
- The dots create legible shadows even under the paint.
- The code matrix remains intact, even if the surface is covered.

The DataMatrix continues to be readable, even after zinc + sandblasting + painting.

It is the only compatible technology:

- Extreme environments
- Thermal shocks
- Thick paint
- Lightweight abrasion
- Multiple treatments

3. Why a Mechanical Data Matrix Is Superior to QR Codes in Galvanized Steel

The QR Code has square and dense modules.

Le DataMatrix :

- uses fewer modules,
- Supports more deformation,
- has better optical resilience,
- is easier to read on a non-uniform surface.

In heavy industry, mechanical data matrixes are read with:

- industrial cameras,
- scanners code 2D,
- smartphones (if sufficient contrast).

The DataMatrix is the EN1090 industry standard.

4. Embossing is definitely incompatible with realistic environments

Many companies are considering embossed plates (such as KettleTag).

But:

- they are thin (0.2 - 0.3 mm),
- they twist in the baskets of galva,
- the relief is flattened or covered,
- the galva fills the hollows and drowns the bumps,
- transport distorts them.

Result:

- Code unreadable
- Damaged plate
- Non-compliance with EN1090
- Risk of non-delivery or customer rejection

For metal traceability, the plate must be:

- made of thick steel or stainless steel (1 mm or more),
- pointed in depth,
- securely attached,
- legible after processing.

Only the DOT PEEN meets these requirements.

5. Automating production: Dot Peen machines with Tag Feeder

To mark **100, 500 or 5,000 metal plates**, the operator may not:

- align the plates one by one,
- manually reposition,
- handle parts that are still hot,
- manage continuous flows.

Machines with **Tag Feeder** allow:

- automatic feeding of 50 to 200 plates,
- robotic positioning,
- continuous datamatrix marking,
- Automatic ejection into a receiving tray.

A REAL INDUSTRIAL PRODUCTION, EN1090 COMPLIANT.

This type of machine is used in:

- Aeronautics
- petrochemicals
- les pipelines
- the metal framework
- Rail
- Offshore

Once programmed, the machine continues to produce on its own, without human intervention.

6. FABBIM: from the metal plate to the geolocation of the construction site

FABBIM is not just a marking. It's a **complete digital chain**, from start to finish:

✓ Creation of the DataMatrix

Unique format for each part or assembly.

✓ Deep Dot Peen Marking

Indestructible pads, readable for life.

✓ Tracking EN1090 batches and certificates

- Sites
- Areas
- Assemblies
- Single Parts
- Material / welding / galvanizing certificates

✓ Scanning + Mobile App

Reading of the DataMatrix on site via smartphone.

✓ Geolocation on 2D / 3D / map plans

The installer scans → the part appears on the map.

✓ Complete history until final editing

You transform your EN1090 procedure into a smooth, modern and inspectable chain.

7. Why do galvanizers love FABBIM Dot Peen plates?

Because:

- they do not detach,
- they do not float in the baths,
- they do not twist,
- they remain legible,
- they are resistant to projections,
- they do not contaminate zinc,
- they do not cling to the bottom of the bath.

For a galvanizer, a FABBIM plate is **zero risk, zero loss**.

Conclusion: the only EN1090 compliant and 100% industrial solution

To guarantee legible metal traceability **after galvanization, after sandblasting, after painting**, there is only **one** technology:

The DataMatrix in deep DOT PEEN

Associated with:

- robust metal plates,
- an automatic Tag Feeder machine,
- a complete digital system (FABBIM),

Finally, you get:

- ✓ indestructible
- ✓ traceability automated production
- ✓ a Data Matrix readable in all conditions
- ✓ total EN1090 compliance a controlled
- ✓ digital chain a better coordinated
- ✓ site a satisfied customer (project manager, design office, EN1090 controller)