



# Introducing the Next Generation of Almen Strips Numbered Almen Strips with Coverage Check Finish

## Numbering System

- Provides a tracking method for meeting specifications, and first-in, first-out, ISO and Nadcap requirements
- Allows lot-to-lot comparison for process consistency
- Part of Electronics Inc.'s comprehensive traceability and audit program
- Denotes genuine EI product

## Coverage Check Finish

(U.S. Patent No. 6,568,239)

- Lapses in coverage are easy to check visually
- Contributes to a proper flapper peening technique
- Enhances capabilities of coverage checker tools

The Almen strip hasn't changed significantly since its development in the 1940s by John Almen. Year after year, the deceptively simple test coupon fulfilled its function as an indicator of shot peening intensity. Shot peening was growing increasingly sophisticated; however, mostly due to its contribution to the aerospace industry. Electronics Inc. (EI) recognized this and has developed an Almen strip with features to help peening facilities meet the demands for increased process and quality control.

## THE ELECTRONICS INC. NUMBERING SYSTEM

The new strips are printed with their lot numbers. This numbering system will simplify record-keeping for facilities that want to:

- Maintain a tracking system to meet specifications and manual procedures
- Meet ISO and Nadcap requirements
- Perform lot-to-lot comparisons for process control
- Maintain first-in, first-out inventory control

## An Added Convenience

Lot numbers are clearly printed on EI's Almen strip boxes but sometimes boxes are thrown away and sometimes strips from different boxes are mixed together. A numbered strip will be a real convenience in those instances. (See the next article on the ultimate strip mix-up.)

## Backed by EI's Traceability and Audit Program

EI's lot numbering system is an outward symbol of their commitment to making the strips the most dependable and consistent strips on the market. Electronics Inc. has developed a traceability program, represented by the strips' lot numbers, to track Almen strips back to their heat number. A heat number is a unique identification code for a piece of metal that holds information about its origins. The heat number provides a method for tracking materials and is an important part of quality assurance and control.

In addition, EI audits four documents from their steel supplier:

- 1) Material certificate - steel composition must conform to SAE 1070 specifications.
- 2) Inspection records for thickness, width and length.
- 3) Process control charts for hardness.
- 4) Decarburization report that confirms zero surface decarburization. (Decarburization is a change in the structure and content of steel in which some of the

carbon in the surface layer or layers of the steel is lost. If an Almen strip has decarburization, its hardness may be compromised and its performance will be unreliable.)

EI's steel supplier is a global industrial group with advanced steel production capabilities and is happy to comply with EI's audit program. Most EI customers will never need to take advantage of the traceability and audit program. Nevertheless, if a supplier or manufacturer in the aerospace, automotive or medical industry faces a liability situation, they can have confidence in the completeness of information on every step of the EI Almen strip manufacturing process, and that the strips were manufactured to the highest standards.

## Denotes Genuine EI Strips

Electronics Inc. has been producing its own brand of Almen strips since 2007. EI took on the responsibility of manufacturing Almen strips to meet the increased demand for strips and to provide better quality control. Unfortunately, non-EI strips have been sold as EI product with the potential for harming EI's reputation. One such instance was brought to EI's attention recently by a distributor when it was discovered that non-EI strips were packaged in white boxes with photocopies of EI strip certification and sold as EI strips. These strips weren't performing to specifications but EI quickly proved that the strips weren't their product. The new identification system is for the protection of the customer and EI. If "EI" isn't printed on the strip, it's not an EI strip.

## THE COVERAGE CHECK FINISH

The strip's patented finish sets it apart from other strips in looks and function. For the first time, an Almen strip will:

- Make visual inspection for coverage uniformity easier. (See Figure 1, page 6) Lapses in coverage in the dark, mottled areas of other strips are difficult to see.
- Reveal improper blast patterns on setups for small or masked areas.
- Contribute to a proper flapper peening technique. Orbital patterns are immediately visible on the EI strip so the operator can make adjustments to his technique, if needed, before peening the actual part.
- Enhance the capabilities of coverage check tools. The new strip is the ideal strip to use with coverage check tools because its bright finish uniformly reflects

light, making it easier for the tool to accurately read the surface.

- Verify uniform peening on strips that have been peened at low intensity. It will be easy to see small dents on an EI strip.
- Provide easy-to-read lot numbers. For operators that used to write lot numbers on the strips: No more smeared numbers in illegible handwriting. Also, the strip's light surface provides great contrast for the large, black lettering.

Please note: The strip with Coverage Check Finish was developed to assist in coverage determination in certain circumstances. The strip is not meant to replace a coverage control procedure on actual components.

**PROVEN CONSISTENT PERFORMANCE**

Laboratory and field tests are continuously performed to ensure consistent performance among lots of the numbered strips, and between EI numbered strips and the original EI strips. Customers can have complete confidence in the strips' consistency, even if they use both the older EI strips and the new numbered strips during a shot peening process. Performance testing histograms are available upon request and a sampling is shown in Figure 2. ●



Figure 1. These strips underwent the same peening process. Verification of uniform coverage is easier on the new strip with Coverage Check Finish than on the darker, mottled strip.

The Electronics Inc. Numbered Almen strips are available at the same price as the original EI strips. For more information and to order, call 1-800-832-5653 (USA and Canada) or 1-574-256-5001.

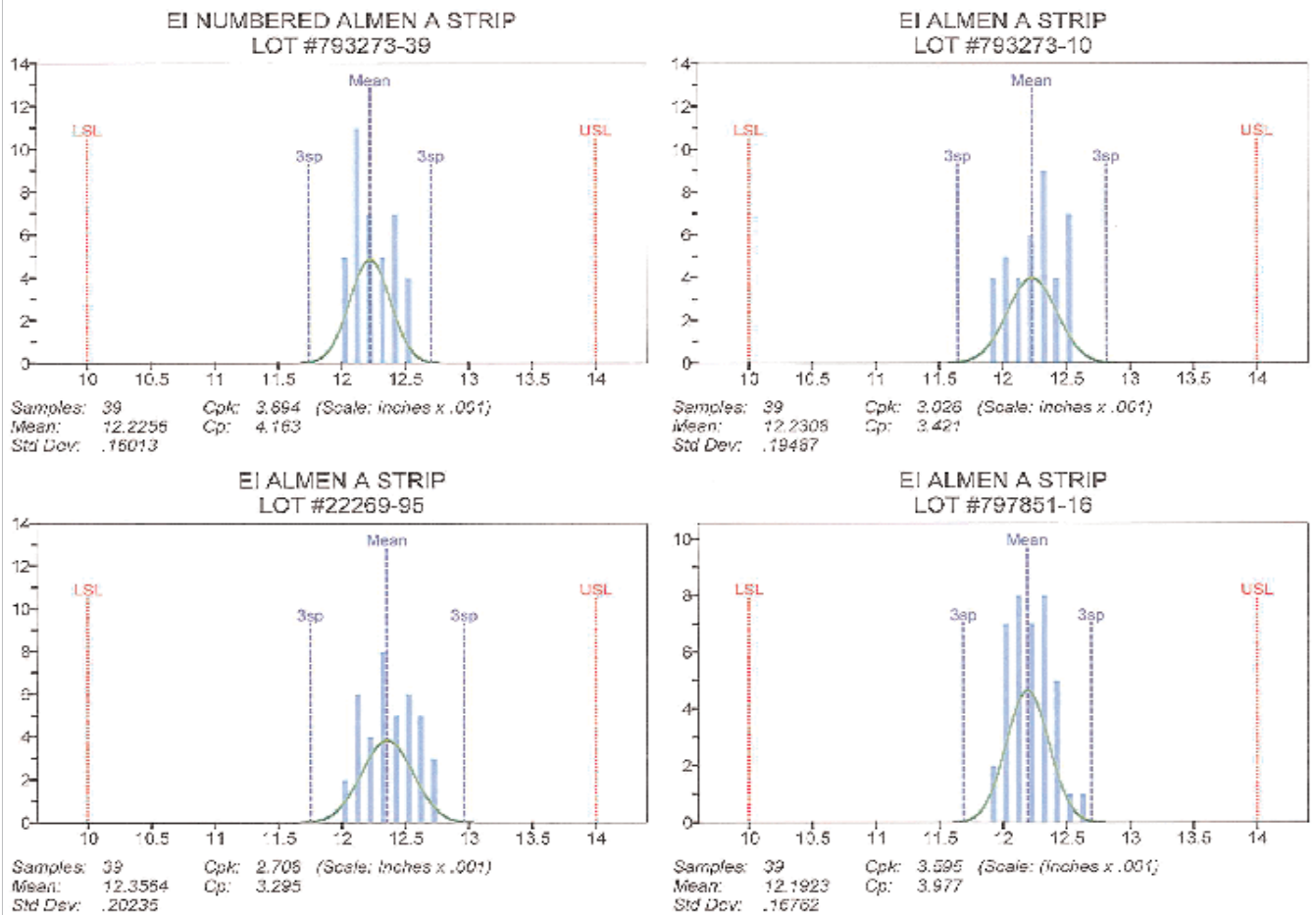


Figure 2. Laboratory and field tests are performed to ensure consistent performance between the new and older EI Almen strips and between lots of the numbered strips. Additional testing histograms are available. Call 1-800-832-5653 (USA and Canada) or 1-574-256-5001.