

With CeCe leading the way, CMW has now peened nearly 30 shafts in under two years. Others in the Navy shafting industry have taken notice of our newfound abilities and have now contracted CMW to perform peening on their shafts. CMW has also peened experimental test pieces for a major Navy shipbuilder. The shipbuilder is researching and measuring the effects of various media types, differing intensities, and their effect on various materials.

CMW has an abundance of peening work to perform in Charleston and at other Naval overhaul facilities. CMW performs new construction and overhaul work of Naval shafting in Charleston and Portsmouth, Virginia. CMW also performs on-site machining of Naval vessels, power generation, steel and paper mills worldwide. Shot peening and rotary-flap peening will be no exception to this. Our equipment is housed in custom transport boxes and can be delivered anywhere in the world.

Our peening capabilities compliment our other services, providing one-stop shopping. Quality Supervisor Dan Crawford said, "We learn with every job we perform and just keep getting better, every time. I highly recommend EI for their products and their training. Without the education and continued guidance from EI we would not have been successful in our endeavors." ●

**About Collins Machine Works**

Since 1960, Collins Machine Works has specialized in industrial-scale solutions. In addition to shot peening, the company provides the following services:

- On-site service
- Pump repair
- Industrial engineered machinery
- Quality assurance
- Large/heavy machinery
- CNC machinery
- Specialized welding services
- Machine shafting and components
- Project management

Collins Machine Works serves these industries:

- Marine
- Steel
- Power generation
- Mining
- Paper and pulp
- General industry
- Municipalities

Facilities:

Charleston, South Carolina  
Portsmouth, Virginia

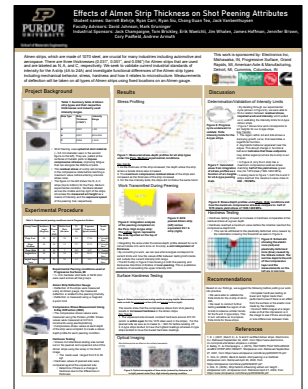
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**Almen Strip Research**

**ENGINEERING STUDENTS** at Purdue University recently presented their senior-year project work in a poster session.

One such poster was titled "Effects of Almen Strip Thickness on Shot Peening Attributes." The participating students are Garrett Behrje, Ryan Carr, Ryan Siu, Chong Guan Teo, and Jack Vanbenthuyzen. The faculty advisors are David Johnson and Mark Gruninger. The industrial sponsors for this project through the Center for Surface Engineering and Enhancement program are Electronics Inc., Progressive Surface, American Axle & Manufacturing, and Cummins.



**Poster Introduction**

Almen strips, which are made of 1070 steel, are crucial for many industries including automotive and aerospace. There are three thicknesses (0.031", 0.051", and 0.094") for Almen strips that are used and are labeled as N, A, and C, respectively. We seek to validate current industrial standards of intensity for the A strip (4A to 24A) and investigate functional differences of the Almen strip types including mechanical behavior, stress, hardness and how it relates to microstructure. Measurements of deflection will be taken on all types of Almen strips using fixed locations on an Almen gauge.

**Recommendations**

Based on our findings, we suggest the following before putting our work into practice.

- We were able to validate the finite limits for the A strip of 4A to 24A.
- We need to conduct further testing **outside** the region of 4A to 24A to observe similar trends for the N and C type strips. This in turn will allow us to propose finite limits for these strips.
- Complete hardness testing at lower and higher loads than performed to see if there is an effect from the surface or the elastic core made by the indenter.
- Conduct SEM images at a larger scale so that the impression is in the image to see if there are shape or size differences between trials.

Visit [www.shotpeener.com](http://www.shotpeener.com) or scan the QR code for the complete poster. ●

