



# Keeping Pace with SAE Documents

It seems like we are never done with SAE documents. The SAE Surface Enhancement Committee made significant changes to SAE J 442 (Test Strip, Holder and Gage for Shot Peening) at our meeting in St. Louis in October 2010 and therefore J 442 will be going out to the Surface Enhancement Committee for ballot. Many of these changes need to be reflected in SAE J 443 (Procedures for using standard Shot Peening Test Strip) and so this document will be opened for edits. Here's a brief summary of suggested changes in J 442:

- Add section for definitions,
- delete section 3 (Outline of Method of Control) and push that information over to J 443,
- replace term "intensity" with "arc height" where needed,
- remove section 5 along with Figure 4 and Figure 5 depicting nomenclature used for gage readings illustrating strip type (A, N or C), and move that information over to J 443.

In summary, J 442 is information on how to produce test strips, holders and gages. J 443 describes how to use the strips, holders and gages.

The SAE aerospace Surface Enhancement task group is working on a long-overdue document, Manual Peening. This has been inspired by the cancellation of AMS-S-13165, the old U.S. Government Military Specification for shot peening. The equipment requirements in section 3.2.1 state:

**3.2.1 Automatic shot peening: The machine used for shot peening shall provide means for propelling shot by air pressure or centrifugal force against the work, and mechanical means for moving the work through the shot stream or moving the shot stream through the work in either translation or rotation, or both, as required.**

I'm not sure how some people can read this requirement and conclude that manual peening can be used to satisfy 13165. I've been told by some committee members that probably half of the peening done to this spec is actually manual peening. So, what's the problem? With the cancellation of 13165 and migration to AMS 2430, we left some orphans. AMS 2430 specifically states in section 8.5:

**8.5 Manual peening is not directly addressed by this specification. Prior and future applications should be as agreed**

**upon between processor and the cognizant engineering organization.**

So, once again, people doing manual peening are acting outside of the specification limits.

Now we have an opportunity to write a new specification addressing manual peening that includes machines with two hand gloves, barrel peening and tumble peening type machines or any other application where the nozzles or the workpiece are not mechanically controlled. This seems like an easy challenge at first but once you start to establish the requirements, you soon realize there is a lot to include.

For instance, how do you determine intensity in a tumble blast machine? Do you allow the strips and holders to tumble with the parts for a machine cycle? What if you place the strips and holders in the machine and let them tumble with the parts but don't turn on the media flow? Will the impact of parts onto the strips cause an arc height response even though they haven't been impacted with shot? This and other concerns led SAE to revise AMS 2430 version R to read:

**4.4.3 Cognizant engineering organization approval of the peening procedure and inspection is required for the use of batch or bulk peening processes and machinery, such as tumble or barrel peening.**

If you're trying to keep pace with this committee you should be aware of the following new specs that have been published by SAE: AMS 2580 Shot Peening Ultrasonically Activated, AMS 2585 Shot Peening Media Ultrasonically Activated, AMS 2590 Rotary Flap Peening, AMS 2592 Flap Assemblies Rotary Flap Peening. Another work in progress is Ultrasonically Activated Needle Peening for Peen Forming.

## ICSP-11 Booth Registration

The Eleventh International Conference on Shot Peening scheduled for September of 2011 has opened registration for exhibit booths. For more information, see page 36 of this magazine or visit [www.shotpeening.org](http://www.shotpeening.org). Over 105 papers have been received for the conference as well as ten poster exhibits. Abstracts are also available at the web site. Students wishing to submit a poster are encouraged to contact the committee secretary, Ms. Lori Bonk, for instructions at 574-256-5001 or [lori.bonk@electronics-inc.com](mailto:lori.bonk@electronics-inc.com). Students may attend the conference at a reduced fee. ●