Standards Topics

Allen W. Grobin, Jr., AESF's Manager for ISO/TC 107 Secretariat
President, Grobin Associates, Inc.
187 Noxon Road
Poughkeepsie, NY 12603
914/485-8542 • FAX: 914/471-5980

The Transition of Military & Federal Specifications

This column is prompted by several calls I recently received concerning the transition of military and federal standards to civilian commercial standards. For those who may not be aware, the Federal Office of Management and Budget (OMB) issued Circular A-119 in October 1993, which set policies for all government agencies in working with the various bodies that form the U.S. Voluntary Standards System and produce the U.S. Voluntary Standards (*i.e.*, ASTM, ANSI and SAE).

The thrust of the OMB circular was to foster the use of commercial standards and specifications instead of federal and military documents. The goal was to reduce the enormous costs of maintaining the federal and military standards and specifications program, as well as the additional costs of updating them on a regular basis.

Secretary of Defense Perry issued a memo in June 1994, directing the Undersecretary of Defense to implement the new policy. It took time for the policy to be transformed into action, but it was well under way by March of 1996 when Public Law 104-113, The National Technology Transfer & Advancement Act of 1995, was signed into law. This law requires that all federal agencies use voluntary standards.

Responsibility for the metal finishing standards was distributed among the various U.S. Army, Navy and Air Force installations. Most of these organizations no longer had the technical expertise to determine if there was an adequate commercial document to be used as a replacement for their document. When there was more than one commercial document, they had a real dilemma. In some cases, they obtained the catalog of one standards organization without realizing that there was another standards organization that produced a more suitable replacement.

One such military specification was MIL-C-25074—Electroless Nickel. This was cancelled and initially replaced by SAE-AMS 2404—Plating, Nickel, Electroless; SAE-AMS 2405—Plating, Nickel, Electroless, Low Phosphorus; and SAE-AMS 2433—Plating, Electroless Nickel-Thallium-Boron or Nickel-Boron. This was later amended to include ASTM B 607—Autocatalytic Nickel Boron Coating for Engineering Use; ASTM B 656—Guide for Autocatalytic (Electroless) Nickel-Phosporus Deposition on Metals for Engineering Use; and ASTM B 733—Autocatalytic Nickel-Phosphorus Coatings on Metals.

The dilemma faced by my correspondents was how to decide which of the six specifications to use. The first step is to read each of the documents and become familiar with their individual requirements. To replace the military specification in this case, a nickel phosphorus alloy with no mention of a low phosphorus content was required. That would eliminate SAE-AMS 2405, SAE-AMS 2433, and ASTM B 607, the latter two using a boron alloy. ASTM B 656 is a guidance document, so the choice is therefore narrowed to SAE-AMS 2404 and ASTM B 733. The next step in the selection process is simply to match the coating requirements of the part to the specifications. If more than just thickness and corrosion resistance are specified, ASTM B 733 will probably apply.

The SAE and ASTM standards writing groups are not in competition with each other, although it may appear so to the casual observer. Rather, they are each writing to different philosophies. The principle difference between the SAE-AMS and the ASTM specifications is that the former are process specifications and the latter are end-point performance specifications.

The need for the process specification is dictated by the Federal Aviation Authority requirements for obtaining "air worthiness" certification of aircraft. In this case, it is necessary to specify each step in the entire process of fabricating the part.

ASTM Committee B08 recently agreed to assist the lead agency in the Metal Finishes and Finishing Procedures (MFFP) area by revising current and/or preparing new ASTM standards to take into account the government requirements. ***P&SF***