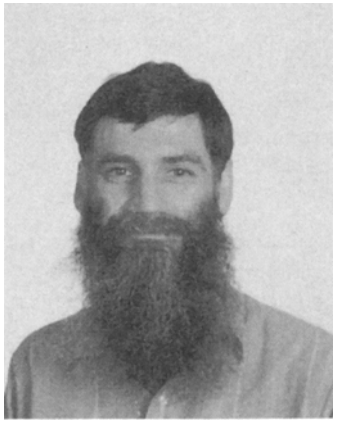
Editorial



"Standardize and Deliver"

This headline appeared recently in the press. Can you imagine a popular global newspaper paying any attention to the subject of "standards", at least in the sense that it concerns engineering and manufacturing? Read on. This is becoming the hot topic, especially for thermal spray and the commercial sector.

"The whole point of standards is that you should not have to think about them. Such considerations as credit cards being of the uniform shape, size and numbering convention to allow them to be used anywhere in the world should be taken care of by somebody else. And, fortunately, somebody else has done so." So writes Claire Gooding in the Survey section of the *Financial Times* (October, Friday 13, 1995, page 1).

Specifications versus Standards

But first it is important to point out that "c" are not standards. A specification will, for example, state that the elastic modulus for a particular material will be of such a value or lie between some well defined limits under certain conditions. A standard (at least as how it is defined within this article) will state the method by which the measurement was obtained, for example, by using a tensometer that has been calibrated with respect to load and displacement to within certain accuracy. Thus, it is probably more logical to refer to "standard methods".

The Advocacy for Standards

So what do standard methods mean with regard to the thermal spray community? To quote the *Financial Times* again: "Standards are more important than they have ever been, in a world economy that increasingly promotes the idea of consumer choice. Choice is included in the concept of consumer power, but so is the principle that the choice should be a safe one." Therefore, standard methods will allow a common lexicon to develop so that specifications can be clearly stated with, presumably, no ambiguity. For instance, a customer will be able to specify that a material have a defined hardness, measured according to a certain standard test method, and be assured that the material, regardless of where it was manufactured, meets his requirements.

The Prosecution Against Standards

The writer of this editorial is not so certain of arguments against test methods. But some could be:

- "This will add cost to the product that I sell since I now need to use new test methods."
- "It is unreasonable to subject my company to these new test methods since we have been very satisfied with our present techniques for many years."
- "These new test methods impose yet another regulation upon my company."
- and others—(Readers: Please let the author know of any other points that you would like to raise!)

The above arguments of "additional cost!", "my customers and I are already happy with our present test methods" and "what—more regulation?!" are non-trivial and can often be argued forcibly on pragmatic terms (rather than on the basis of emotive arguments). For example, consider the conversion of the USA to the metric system. Every reader probably agrees that this has been a dismal failure.

What are the Important Standards and Who "Carries the Torch"?

A list of standards that need to be developed for thermal spray materials includes the following as a bare minimum:

- Bond strength testing
- Hardness testing
- Thermal expansion testing
- Measurement of roughness
- Measurement of porosity

The organizations presently involved in this type of activity for thermal spray materials include, but are not restricted to, ASM International, the American Society for Testing Materials (ASTM), the American Welding Society (AWS), the International Standards Organization (ISO), the National Association of Corrosion Engineers (NACE) and the National Institute for Standards and Technology (NIST). As well, the larger companies, in their quest to maintain rigid tolerances on their products, often have internal standard test methods which eventually pervade the job shops.

It quickly becomes apparent that no single organization can or should champion the cause of "standards" or "standard methods" for the thermal spray community. There is just so much work needed. What really is needed is a "call to arms" of all the interested parties; i.e., industry, national labs, and universities, so that a concerted and unified approach can be made. After all, the formulation of such essential engineering needs will benefit all of the thermal spray society. Please write to the Editor if you would like to join in an activity that addresses the subject content of this editorial.

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