

DON'T GET STUCK WITH NONCONFORMING MATERIAL

SUMMARY

Anyone who has been in the tooling and machining industry for any length of time knows that problems arising from metal that are off-analysis or otherwise defective can be one of the biggest headaches in the business. Often, the material isn't found to be defective until after much labor and machine time has been put into it. At that point, even if the supplier of the material replaces or makes up the material's cost, you aren't likely to be able to recover your own input and it will probably be too late to meet your customer's delivery deadline.

Sound familiar? Of course it does. But there are some precautions you can take to protect yourself.

Andrew G. Sharkey, President of the Steel Service Center Institute, recently offered some suggestions to service center customers on this subject. Sharkey stated that "service centers will take back faulty or damaged metal and replace it without question; in turn, they can normally get an adjustment from the supplying mill."

"Nevertheless," Sharkey cautioned, "the customer should make sure in advance that a service center will take care of his complaints on damage and quality defects." Sharkey pointed out that service centers are sales organizations and are anxious to maintain a customer's goodwill by settling claims and complaints fairly and promptly.

"A key question," Sharkey suggests customers ask, "is whether or not a service center's truck driver will accept a signed receiving slip on which the customer has noted the condition of an incoming shipment." If the steel supplier balks at this straightforward procedure, it might suggest that problems could arise in handling a claim.

For critical applications, Sharkey suggests that, as the customer, you should insist on receiving test reports or make sure that chemical analysis or other pertinent test data is at least on file at the service center. Most service centers will provide copies of chemical analysis reports upon request without additional cost.

Another common problem involves identifying markings on metal that must undergo machining operations. Heat numbers or color codes on metal from the supplier are usually machined away quickly. The Steel Service Center Institute is quick to point out that it is the user's responsibility to retain the identity of his own metal in his own plant. One possibility

is to have the supplier stencil heat numbers or other information along the entire length of a pre-machined or semi-machined surface of bar products.

Normally the service center requires a premium charge for such extra identification, however.

Sharkey also pointed out that through computerization, many service centers now have 100 percent traceability for metals. He also added that "if an end-user needs steel processed in a certain way—whether it involves flame cutting, cutting to length, slitting, sawing, etc.—a service center will usually show samples of similar work performed to the desired specifications or run a sample batch of the customer's material through a processing operation if the requirements are quite special." As an example, Sharkey said that if a stamper wishes to make sure that a service center's slitting is within certain tolerances, he can send a coil to be run through the center's equipment.

There are some very specific requirements for defense contractors regarding nonconforming material. These requirements are specified in MIL-Q-9858A, the military specification for Quality Program Requirements cited for much defense and aerospace work. The standard requires contractors to "... establish and maintain an effective and positive system for controlling nonconforming material, including procedures for its identification, segregation and disposition."

A material control system as required by MIL-Q-9858A usually involves careful incoming inspection of all new material. The receiving inspection should check and verify all applicable specifications including dimensions, condition, and physical and chemical test reports, as applicable.

The material should also be positively identified upon arrival at your plant. This can be accomplished by tagging, marking or both. Identification should include not only the material specifications, but also the customer and job number.

If you need to rely on the services of an independent testing laboratory, a comprehensive directory of such labs is available from the American Council of Independent Laboratories, 1725 K Street, N.W., Washington, D.C. 20006, telephone 202-887-5872.

If material is found to be out of conformance, it must still be identified as such, usually by "DO NOT USE" tags. The material should then be kept isolated from other stock in order to avoid its accidental use.

If nonconforming material is found in your production cycle, all questionable parts must be held separate and withheld from shipment until they can be properly inspected and cleared.

Several means of disposal can come into play under the government specifications. Repair or rework of defective material must be undertaken only with approval of the government customer and all pertinent procedures clearly spelled out in writing. The government may also request that you provide data on costs associated with rework, scrap or other losses resulting from nonconforming material. Once the government requirements have been met, negotiations to replace or return the defective stock can proceed as with any other job.

If your company performs secondary operations, then your nonconforming material worries naturally extend beyond raw material to the castings, forgings, assemblies, and partially machined products that arrive at your plant. Since these kinds of workpieces are more complex and costly than raw stock, there is greater chance of nonconformance and the defects may be more difficult to identify.

It should also be kept in mind that even though some companies attempt to limit their liability to the value of material in customer-supplied parts, courts have held that such companies are specialists in their field and must be responsible for the full value (including labor input, etc.) of customer parts. Depending upon your situation, this concept can work for you or against you, so be cautious. Each legal dispute of this kind must be weighed on the individual case's circumstances, but the best protection is to be careful and have everything in writing.

One NTMA member company succeeded in recovering the full value of a batch of parts ruined by a plater, while another member in a different part of the country had to make up the cost of an expensive prototype after removing too much metal in a secondary operation.

With such complex incoming products, the American Society for Quality Control suggests considering some of the causes of nonconforming parts. For example, the design may be unrealistic; cost of eliminating defects may be prohibitive (that is, it may be cheaper to scrap parts up to a point); tolerances may be too tight for the processes or equipment used; and some defects can be caused merely by chance.

The receiving inspection is your first line of defense against nonconforming material problems. If defective material is found, your recourses usually include scrap, rework or repair, use "as is," or return to the supplier for replacement. In any of these cases, recordkeeping and open communication with your customer and your supplier are absolutely essential.

This BMA was prepared by NTMA's Technical Department.