



ArcelorMittal Tubular  
132 W. Main St  
Shelby, OH 44875

To whom it may concern:

This letter is in regards to one of our suppliers, Spartan Carbide. We first met Spartan Carbide several years ago on an unexpected visit. Since one of our Core Values is *Continuous Improvement*, we agreed to visit with them to see what they had to offer. We then took them to see one of our most difficult machining applications – cutting large-diameter (up to 8”) heavy-walled (up to 1.500”) tubing. This tubing is made from Seamless Hot-Finished grade 4140 steel, quench-and-tempered to a hardness of roughly 30-40 Rc.

This tubing was manufactured for use in hydraulic cylinders, an application that requires extreme high quality. It was being cut to a specified length on an old machine that had seen its better days; the wear and tear had reduced the capability of the machine. In addition, the seamless tubing is not exactly round or straight, causing multiple interrupted cuts. Our cost in this operation was approximately \$1 per cut piece, due to the high cost of tooling and the down-time associated with tool-changes, and we had been attempting to improve this high cost for several years. This was a mighty challenge indeed for Spartan Carbide.

We patiently worked with Spartan Carbide for several months, and they stubbornly kept supplying us numerous prototypes for at least a half-dozen trials. The ability of this supplier to use their wealth of tooling and engineering expertise to revise and improve their design resulted in a tool that was better than any we had ever seen before. We were able to reduce our overall costs to approximately \$0.26 per cut piece.

These past couple of years has seen both lean times and record-setting production, and Spartan Carbide has been there with us all along the way. One of the most important requirements we have is that we do not want to ever be forced to shut down production for lack of tooling, and Spartan Carbide never has. We truly have become partners, and we rely on them to continue to supply us the highest quality tooling and service – hopefully for many more years to come. I highly recommend Spartan Carbide as your preferred carbide tooling supplier.

Sincerely,

**Craig W. Cox** | Sr Process Engineer  
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