The Cast and Helix of welding filler wire may have an effect on feedability, weld accuracy, arc wander, consumable life and contact current pickup. The cast of the wire is the diameter of a circle it would make if you were to cut several feet off the spool and lay on a clean flat surface while the helix is the distance the wire will rise from that flat surface. A smaller cast can cause the wire to have more pressure (more bends) in the liner and contact tip, which will lead to premature wear and poor feeding. A large cast may tend to be loose in liner and the bore of the contact tip leaving a poor contact for the current to flow. Consistent small wire helix will ensure wire tracking and keep the weld bead on target.

Washington Alloy’s Solid Carbon Steel Welding Wire above 0.035” on 12” spools has a typical cast of about 22 inches with a helix of 0.25 inches. AWS requirements are not less than 15 inches with no more than a 1 inch helix.