



DW-316L is an advanced stainless flux cored wire that significantly reduces spatter and fumes over a wide range of welding parameters and features self-peeling slag removal and glossy bead appearance.

Basic characteristics of DW-316L

DW-316L is classified as AWS A5.22 E316LT0-1 and E316LT0-4, suitable for welding both 316L and 316 stainless steel in flat and horizontal positions. As for shielding, either CO₂ gas or 75-80%Ar + balanced CO₂ gas mixtures can be used.

What makes DW-316L an advanced wire?

Properly controlled ferrite content (typically 8% by Schaeffler Diagram) in DW-316L weld metal provides excellent resistibility to hot cracking. Low carbon content (typically 0.026%) in the weld metal provides superior resistance to intergranular corrosion. To verify resistance to intergranular corrosion, Strauss testing (Copper Sulfate Sulfuric Acid Test) per JIS G0575, equivalent to ASTM A262 Practice E, is generally employed. In this testing, DW-316L weld metal sensitized by the heat treatment (650°C×2h) exhibits no cracking in the bending test after corrosion testing. The sophisticated chemical composition of the weld metal provides outstanding mechanical properties and corrosion resistibility against diluted sulfuric acids in particular.

DW-316L significantly lessens spatter by 40-50% when compared with conventional stainless flux-cored wire. DW-316L features convenient self-peeling slag removal and glossy bead appearance. Because less postweld cleaning is required to remove spatter and slag, material and labor costs can be reduced. DW-316L also produces 20-25% less fumes compared with conventional stainless flux cored wire. This improves the work environment for welders.

DW-316L also provides higher deposition rates than solid wires and covered electrodes as shown in Figure 1. For instance, the deposition rate of DW stainless wires can be about two times that of covered electrodes at 150A and about 1.2 times that of solid wires at 250A. The use of 1.2-mmØ wire can produce higher deposition rates than 1.6 mmØ. This means that you can fill a particular welding groove faster with DW-316L, thereby increasing productivity while decreasing labor costs.

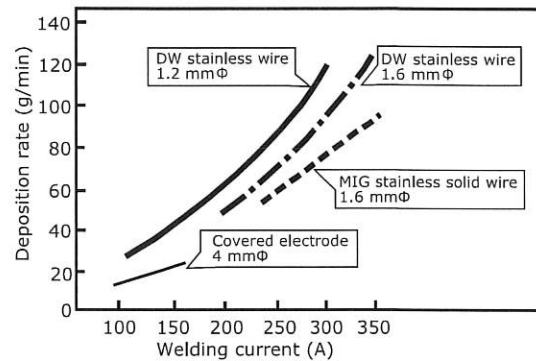


Figure 1: A comparison of deposition rates between flux-cored wire, MIG solid wire and covered electrode as a function of welding current.

Because of the superior corrosion resistibility, mechanical properties and usability, DW-316L is often used for welding 316L stainless solid and clad components of chemical tankers that require stricter corrosion resistance of the welds—Figure 2. In order to ensure the quality of the welds in the ship applications, DW-316L is approved by ship classes such as AB, LR, NV, BV, and NK.

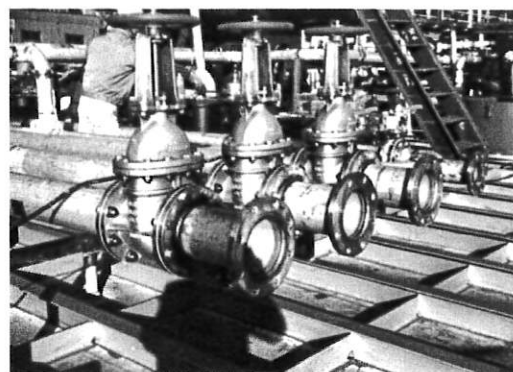


Figure 2: An application of DW-316L for fillet welding of the pipe fittings and pipelines equipped on the bridge and in the cargo tanks of a chemical tanker.