



**WA. ALLOY CO.**

WASHINGTON ALLOY'S Quality  
Management System is  
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Cert # 05-R0925

# 316L HiSiL Welding Wire and Rod

U.S. ALLOY CO.  
dba Washington Alloy  
7010-G Reames Rd.  
Charlotte, NC 28216  
[www.weldingwire.com](http://www.weldingwire.com)



**American Welding Society**  
Sustaining Company Member



## ALLOY DESCRIPTION AND APPLICATION;

USA 316L-HiSiL has a higher silicon content along with a low carbon content, producing better arc stability, smoother bead appearance and excellent resistance to carbide precipitation along with improved wetting action. USA 316L-HiSiL is used for welding austenitic acid-resistant steels such as those containing 18% Cr – 8% Ni – 2-3% Mo.  
(Tri-mix gas = 90%He+7.5%Ar+2.5%CO<sub>2</sub>)

## TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	Tri-mix (cfh)
0.023	180-400	30-85	14-19	3/8-1/2"	20-25
0.030	150-350	45-125	15-20	3/8-1/2"	20-25
0.035	120-330	60-150	16-22	3/8-1/2"	20-30
0.045	100-280	90-210	17-22	3/8-1/2"	25-30
<i>Spray 0.030</i>	<i>280-600</i>	<i>160-220</i>	<i>24-28</i>	<i>3/8-1/2"</i>	<i>(1)25-35</i>
<i>0.035</i>	<i>250-470</i>	<i>170-295</i>	<i>23-29</i>	<i>1/2-3/4"</i>	<i>(1)25-35</i>
<i>0.045</i>	<i>200-385</i>	<i>195-360</i>	<i>24-30</i>	<i>1/2-3/4"</i>	<i>(1)30-35</i>
<i>1/16"</i>	<i>110-200</i>	<i>210-380</i>	<i>25-31</i>	<i>1/2-3/4"</i>	<i>(1)35-40</i>

(1) 98%Ar  
2%O<sub>2</sub>

## TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	80-150	12	3/8"	20	1/16-1/8"
3/32"	3/32"	150-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	200-375	12	1/2"	25	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

## TYPICAL WIRE CHEMISTRY RANGE (%) & TYPICAL WELD METAL PROPERTIES

Carbon	0.03 max.	Tensile Strength (psi)	88,000 min.
Manganese	1.0-2.5	Elongation	41 % min.
Silicon	0.65-1.00		
Molybdenum	2.0-3.0		
Nickel	11.0-14.0	Phosphorus	0.03 max.
Chromium	18.0-20.0	Sulfur	0.03 max.
Copper	0.75 max.		

**AVAILABLE SIZES:** TS316L-HS = Spools of 023, 030, 035, 045,  
TT316L-HS = Cut lengths of 030, 035, 045, 1/16, 3/32, 1/8, 5/32, 3/16  
Other sizes available – please inquire

**SPECIFICATIONS;** ANSI/AWS A5.9 ER316LSi  
ASME SFA 5.9 ER316LSi

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