Alloy: COREWELD 61 | Class: ERNi-1

ERNi-1 (Alloy 61) • Weld Processes: GMAW, GTAW & SAW

CERTIFIED TO
AWS A5.14
ASME SFA A5.14

AWS CHEMICAL COMPOSITION REQUIREMENTS | DEPOSITED CHEMICAL COMPOSITION % (TYPICAL)

AWS REQUIREMENT (%)		TYPICAL DEPOSIT (%)	
C	0.15 max	**C**	0.06
Mn	1.0 max	**Mn**	0.30
Fe	1.0 max	**Fe**	0.10
P	0.03 max	**Cu**	0.02
S	0.015 max	**P**	0.008
Si	0.75 max	**S**	0.003
Cu	0.25 max	**Si**	0.40
Ni	93.0 min	**Ti**	3.0
Al	1.50 max	**Al**	0.50
Ti	2.0 – 3.5	**Ni**	Balance
Other	0.50 max		

DEPOSITED ALL WELD METAL PROPERTIES % (AW) | CHARPY-V-NOTCH IMPACT PROPERTIES %

MECHANICAL PROPERTY		CHARPY-V-NOTCH IMPACT
Tensile Strength	66,000 psi	*Not applicable*
Yield Strength	38,000 psi	
Elongation	28%	

APPLICATION

COREWELD 61 ERNi-1 (61) is used for GMAW, GTAW and SAW welding of Nickel 200 and 201, joining these alloys to stainless and carbon steels, and other nickel and copper-nickel base metals. Also used for overlaying steel.

RECOMMENDED WELDING PARAMETERS FOR TIG, MIG & SAW WELDING OF NICKEL ALLOYS

PROCESS	DIAMETER OF WIRE	DIAMETER OF WIRE (MM)	VOLTAGE (V)	AMPERAGE (A)	GAS
TIG					
	.035 in	0.90	12–15	60–90	100% Argon
	.045 in	1.20	13–16	80–110	100% Argon
	1/16 in	1.60	14–18	90–130	100% Argon
	3/32 in	2.40	15–20	120–175	100% Argon
	1/8 in	3.20	15–20	150–220	100% Argon
MIG					
	.035 in	0.90	26–29	150–190	75% Argon + 25% Helium
	.045 in	1.20	28–32	180–220	75% Argon + 25% Helium
	1/16 in	1.60	29–33	200–250	75% Argon + 25% Helium
SAW					
	3/32 in	2.40	28–30	275–350	Suitable flux may be used
	1/8 in	3.20	29–32	350–450	Suitable flux may be used
	5/32 in	4.00	30–33	400–550	Suitable flux may be used

Note: Other shielding gases may be used for MIG and TIG welding. Shielding gases are chosen taking quality, cost, and operability into consideration.
Note: Both agglomerated and fused fluxes can be used for submerged arc welding.
Note: The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and mechanical properties.

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