



Land Wind Tower Welding Solution



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Lincoln Electric China WECHAT

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Application: Land Wind Tower

Base Metal: Q345D

Process: GMAW or FCAW Rppt / SAW fill, double passes and standard multi passes welding

Focus: ·Tensile (traverse) $\geq 480\text{Mpa}$

·bending test (front& back): no defection occurred after bending test

·-20°C impact (bead& heat affected zone) $\geq 34\text{J}$



Lincoln Electric Solutions of welding materials:

Root:

JM™-56 [AWS A5.18 ER70S-6] PRIMACORE® LW-71® [AWS A5.20 E71T-1C/9C]

Cap Filling:

JW™-1 [H10Mn2] /SJ-101 [GB:F5A4-H10Mn2]

JW™-1 [H10Mn2] /SJ-101G [GB:F5A4-H10Mn2]

JW™-1 (H10Mn2)

Low carbon, high manganese and low manganese, conforms to GB/T5293:H10Mn2, suitable for single / multiple wire with alkaline flux.

SJ-101

With excellent welding process, stable arc and fine appearance, it is the perfect choice for wind tower multiple passes and layers welding which meets -20°C impact requirements. It is also suitable for two passes welding.

SJ-101G

With excellent welding process, stable arc and fine appearance, it is the perfect choice for wind tower multiple passes welding which meets -20/-40°C impact requirements. It is also suitable for multiple passes welding.

JW™-1/SJ-101 AWS Mechanical Properties

Tensile (Mpa)	Yield (Mpa)	Elongation (%)	Impact (J@-40°C)
550	455	26	59, 63, 65

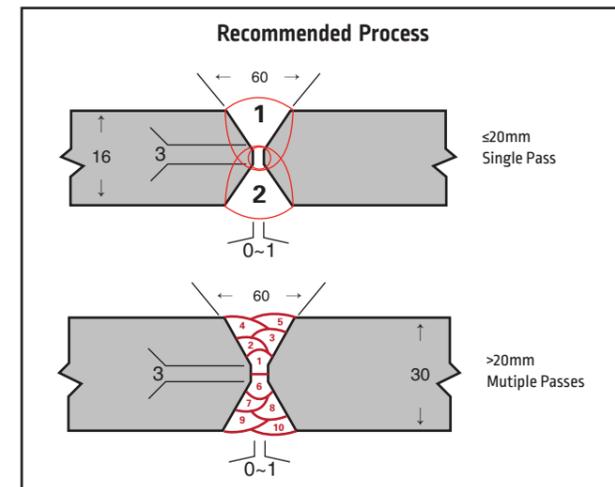
Application: JW™-1 [H10Mn2] /SJ-101 multiple passes, excellent impact performance under -20°C

JW™-1/SJ-101G AWS Mechanical Properties

Tensile (Mpa)	Yield (Mpa)	Elongation (%)	Impact (J@-40°C)
540	440	28	65, 85, 87

Application: JW™-1 [H10Mn2] / SJ-101G joint has excellent impact toughness under -20°. JW™-1 / SJ-101G is more suitable for single pass welding.

★ The above consumables have been applied to this industry.



The manufacture's major goal is to improve efficiency during wind power production. The Lincoln Electric POWER WAVE® AC/DC 1000SD is perfect for multiple arc.

Comparison between single wire and multiple wire :

Process	Single wire		Double wire	
	DC+	DC+	DC+	AC
Polarity	DC+	DC+	DC+	AC
Diameter (mm)	4.0	4.0	4.0	4.0
Amperage (A)	500 - 550	650	650	550
Voltage (V)	30-32	30	30	34
Stick-out (mm)	25	32	32	
Welding speed (mm/min)	500	750	750	
Deposition (Kg/h)	5.1	17.2	17.2	

★ Compare to single wire, double wire

Lincoln Electric Solution of welding machine:

POWER WAVE® AC/DC 1000SD+MAXsa10

Key features:

- Adopt latest inverter. Compared to conventional thyristor power source, it directly reduces production cost by saving over 40% power.
- Easy to operate at parallel machines and multiple wires. In multiple-wire operation, arc interference is minimized and stable arc output is ensured.
- ArcLink®, Ethernet™, Devicenet™ communication. Control the process and trouble shoot remotely.
- Production monitoring™ 2 is conducive to welding efficiency analysis
- Adopt waveform control, adjusting offset and balance of output wave to improve welding efficiency by improving penetration and weld appearance.

