

MIG · TIG Wire/Rod



Welding Notes

For GMAW (MIG)

1. Using pulse arc transfer mode (the preferred method) for welding, even if the welding current is very low will allow stable arc. Welding polarity : DC+ mainly.
2. Spray arc transfer mode or pulse arc transfer mode requires Ar as shield gas while He is more fitting for short circuit arc transfer mode. The proper shielding gas flow rate is 20~25L/min.
3. Ar-He mixing gas can be also applied to the welding of Nickel base alloy, with the He amount increase, the bead appearance is to get wider, flatter and shallower penetration.
4. Short circuit arc transfer mode is recommended for Ni-Mo or Ni-Cr-Mo alloy; furthermore, adding about 1% O₂ into He-Ar mixing gas can stabilize arc so as to get great weld metal soundness.
5. No preheat necessary and the inter-pass temperature $\leq 150^{\circ}\text{C}$.
6. When applying pulse arc transfer mode, using the suggested lower limited welding current for speedy welding can avoid hot crack occurrence.

For GTAW (TIG)

1. Use Ar, He, or Ar-He mixing gas as shielding gas.
2. Welding polarity: DC- (electrode negative);
Shielding gas flow rate :10~15 L/min.
3. During one side welding, the backside must be purged by inert gas to prevent oxidization.
4. No preheat necessary and the inter-pass temperature $\leq 150^{\circ}\text{C}$.
5. Proper adjust arc voltage to keep the arc length within 4~6 mm.
6. Use low welding current to prevent hot crack occurrence.



GTN82 / GMN82

AWS A5.14 ERNiCr-3
JIS Z 3334 SNI6082

Product Features:

- Good heat, corrosion resistance and good mechanical properties of weld metal.

Applications:

- Welding of similar grade of nickel base alloy.
- Welding overlay to carbon, low alloy steel, stainless and Ni steels.

Shielding gas:

- Ar + 0.5~2.0%O₂ (GMAW)
- 100% Ar (GTAW)

© Note: Recommend pulse or spray arc (low current) for RT examination purpose.

Typical chemical composition of rod / wire (wt%)

C	Si	Mn	Ni	Cr	Nb	Fe	Ti
0.03	0.18	3.2	Bal.	18.9	2.45	2.0	0.15

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
680	39

MIG wire size(mm) & recommended welding parameters (A)

Diameter	0.9/1.0	1.2	1.6
Current Range	70~180	130~230	180~280

TIG rod size diameter / length (mm)

Diameter	1.6	2.0	2.4	3.2
Length	1000	1000	1000	100

GTN625 / GMN625

AWS A5.14 ERNiCrMo-3
JIS Z 3334 SNI6625

Product Features:

- Mo,Nb element to get good heat and corrosion resistance, good mechanical properties.

Applications:

- Welding of similar grade of nickel base alloy.
- welding of 9% Ni steel.
- Welding overlay to carbon, low alloy steel, stainless and Ni steels.

Shielding gas:

- Ar + 0.5~2.0%O₂ (GMAW)
- 100% Ar (GTAW)

© Note: Recommend pulse or spray arc (low current) for RT examination purpose.

Typical chemical composition of rod / wire (wt%)

C	Si	Mn	Ni	Cr	Nb	Mo	Fe
0.05	0.20	0.25	64.8	21.5	3.75	9.10	0.35

Typical mechanical properties of all-weld metal

Tensile Strength N/mm ²	Elongation %
680	39

MIG wire size(mm) & recommended welding parameters (A)

Diameter	0.9/1.0	1.2	1.6
Current Range	70~180	100~230	180~280

TIG rod size diameter / length (mm)

Diameter	1.6	2.0	2.4	3.2
Length	1000	1000	1000	1000

