

MIDALLOY 25/35R BARE WIRE

CLASSIFICATION

- Non AWS / EN12072 W2535 DIN 8556 SG-X NiCrNb 35 25, West-Nr 1.4853

DESCRIPTION

- MIDALLOY 25/35R is used for joining and surfacing austenitic heat resistant steels with similar chemistries. It has a little more than 1% Niobium added for excellent creep resistance.
- MIDALLOY 25/35R can also be used on Niobium free alloys as well as high carbon heat resisting alloys such as HK40. Reference Din 17465, ISO 11973, 1.4852 GX40NiCrSiNb and ASTM A297 HP35 MOD.
- MIDALLOY 25/35R has good resistance to creep, oxidation, carburization, and resists scaling up to 1,050 °C (1,922 °F)

APPLICATION

- MIDALLOY 25/35R is primarily used in the petrochemical industry for items such as reformer tubes and pyrolysis coils.

TYPICAL CHEMISTRY

C	Mn	Si	S	P	Cr	Ni	Nb	Cu
0.43	1.74	1.1	0.003	0.010	25.8	35.2	1.32	0.03

TYPICAL MECHANICAL PROPERTIES / As Welded

TENSILE STRENGTH	87,000 PSI
YIELD STRENGTH	58,500 PSI
ELONGATION IN 2"	8%

RECOMMENDED WELDING PARAMETERS (See Page 2)

PACKAGING

- TIG 10 lb. tube/60 lb. carton
- MIG 33 lb. spool

4/2/2018

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TYPICAL WELDING PARAMETERS FOR MIDALLOY 25/35R WELDING WIRE

GMAW (SHORT CIRCUITING MODE) Midalloy 25/35R

WIRE DIA.	AMPERAGE DCRP	VOLTAGE	WIRE SPEED, IN./MIN.	JOINT THICKNESS IN.	GAS
.035"	70-90	18-20	150-200	.050-3/16	75Ar/25He
	70-90	17-20	150-200	.050-3/16	90He/7.5Ar/2.5CO ₂
	70-90	17-20	150-200	.050-3/16	69Ar/30He/1CO ₂
.045"	75-160	19-22	175-225	1/8-3/4	75Ar/25He
	75-160	19-22	175-225	1/8-3/4	90He/7.5Ar/2.5CO ₂
	75-160	18-22	175-225	1/8-3/4	69Ar/30He/1CO ₂

GMAW (SPRAY TRANSFER MODE) Midalloy 25/35R

.035"	140-190	26-30	200-275	1/8 and Up	75Ar/25He or
.045"	190-250	30-32	300-350	3/8 and UP	98% Argon 2% CO ₂

GMAW (PULSED CURRENT MODE) Midalloy 25/35R

.045" Avg peak	120-150 250-300	18-20	175-225	1/8-3/4	75Ar/25He or 100%Ar overlay
.045" Avg peak	120-150 250-300	18-20	175-225	1/8-3/4	69Ar/30He/1CO ₂ 65Ar/33He/2CO ₂

GTAW (TIG) Midalloy 25/35R

JOINT THICKNESS IN.	TUNGSTEN ELECTRODE DIA. IN.	FILLER WIRE DIA. IN.	AMPERAGE DCSP	VOLTAGE	GAS
.030" to 1/16"	1/16"	1/16"	35-60	9-12	100Ar
1/16" to 1/8"	1/16" to 3/32"	1/16" or 3/32"	50-95	9-12	100Ar
1/8" to 1/4"	3/32" or 1/8"	3/32" or 1/8"	75-150	10-13	100Ar
1/4" and up	3/32" or 1/8"	3/32" or 1/8"	95-200	10-13	100Ar

Note: This is a completely austenitic filler material and requires special welding restrictions:

- Remove rust, scale, grease or other foreign material from joint area prior to welding.
- Taper grind all starts and stops to insure proper tie-in of welds.
- Use stringer beads only, watch for crater cracks.
- Avoid concave weld beads – be sure weld beads have positive reinforcement
- Use low heat input- see welding parameters above
- Normally no preheat required
- Keep interpass temperature under 350 °F
- Whenever possible design for full penetration welds
- Fill all craters to avoid crater cracks
- Allow bead start to “over build up” to avoid crater cracks
- Avoid highly restrained weld joint designs to avoid cracking due to high stress

4/18/18

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