Technical Data Sheet

UGIWELD™ 52N

Chemical composition (%)

C	Si	Mn	Ni	Cr	Mo	Cu	N
≤ 0.03	≤ 1.0	≤ 1.5	4.5 – 6.5	24.0 – 27.0	2.9 – 3.9	1.5 – 2.5	0.1- 0.25

01-10-2021 – REV 05

Classification

Super Duplex grade

Designation

Material No.

Europe – EN ISO 14343-A	USA – AWS A5.9	Europe – WNr.
Z 25 5 3 Cu N L	ER2553	1.4507

Other material name

USA	France (AFNOR)	Germany (DIN)	UK (BS)	Sweden (S S)

Approvals

	MIG	TIG	SAW
TÜV (Germany)			
CE	X	X	X
DB			

Mechanical properties

Using the recommended above welding parameters, the mechanical properties will be as follows:

Temperature (°C)	-50°C	Room Temperature	200°C
Tensile strength (MPa)		800	650
Yield strength (MPa)		600	450
Elongation (%)		30	30
Striction (%)			
Impact ISO V (J)	40	80	

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Recommended welding parameters

MIG welding

Recommended shielding gas:

» Argon + CO_2 (1 to 2%) + Azote (3 to 5%)

» This type of mixed gas gives the best ratio for smooth transfer, low porosity and over-alloying.

» Hydrogen should not be added to the shielding gas.

» Short-Arc

Current	90 / 140 A
Voltage	19 / 22 V

Normal Spray-Arc is possible but no recommended.

Pulsed arc is recommended for a good transfer.

Interpass must be controlled to less than 150°C

TIG Welding

» Shielding gas: UGIWELD™ 52N must be used with a small amount Nitrogen (3 to 5 %) in Argon gas for over-alloying.
Hydrogen should not be added to the shielding gas.

» Current	100 - 200 A
» Voltage	10 - 20 V

» Interpass must be controlled to less than 150°C

» Heat input	0.6 to 2.2 kJ/mm as indicated below.

Swiss Steel Group

Production sites: Ugitech SA
www.swisssteel-group.com

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Heat input must be controlled as follows:

	BUTT WELD				FILLET WELD			
Welding process	Pulsed GMAW		GTAW		Welding process		Pulsed GMAW	
Shielding gas	Ar 95,5% + CO_2 1,5% + N_2 3%		Ar + N_2 4%		Welding gaz		Ar 95,5% + CO_2 1,5% + N_2 3%	
Plate thickness (mm)	**Mini Heat Input (kJ / mm)**	**Maxi Heat Input (kJ / mm)**	**Mini Heat Input (kJ / mm)**	**Maxi Heat Input (kJ / mm)**	**Mini Heat Input (kJ / mm)**	**Maxi Heat Input (kJ / mm)**	**Mini Heat Input (kJ / mm)**	**Maxi Heat Input (kJ / mm)**
4.76	0.38	0.47	0.60	0.80	0.60	0.77	1.00	1.30
6.35	0.55	0.65	0.90	1.10	0.73	1.05	1.24	1.73
7.93	0.65	0.87	1.10	1.45	0.80	1.22	1.60	2.05
9.50	0.73	1.05	1.24	1.75	0.85	1.30	1.60	2.15
12.00	0.94	1.15	1.60	1.95	0.97	1.35	1.60	2.20
16.00	0.95	1.30	1.60	2.20	0.97	1.35	1.60	2.20
19.00	0.97	1.32	1.60	2.20	0.97	1.35	1.60	2.20
26.00	0.97	1.35	1.60	2.20	0.97	1.35	1.60	2.20

Available products

Process	Shape	Diameter Range	Packaging	Weight
TIG	Rods	1.0 – 4.0 mm	Cardboard tubes	5 kg
MIG	Wire	0.8 – 1.6 mm	Metallic spools – BS 300	15 – 18 kg
		0.8 – 1.2 mm	Plastic spools – D 200	5 kg
			Plastic spools – D 300	15 kg
		1.0 – 1.6 mm	Plastic spools – D 350	25 – 27 kg
		0.8 – 1.2 mm	Pay off pack - Drums	250 – 500 kg
SAW	Wire	1.6 – 3.2 mm	Rims K415 / 300 / 94	20 – 25 kg
			Rims K435 / 300 / 70	

Contact us for dimensions

Applications

UGIWELD™ 52N is suited for joining austenitic-ferritic stainless steels such as UNS S32550 and all other Super Duplex stainless steels.

» Sea water systems.
» Phosphoric acid production and transportation.
» Pulp and paper industry.
» Scrubbers for depollution.
» Strippers and reactors for urea production.
» Acid gas industry and offshore.

UGIWELD™ 52N is also suitable for joining all Duplex stainless steels, unalloyed and low alloyed grades