

Flux Cored Wire for Girth Welding - Offering Something New

All position welding up to X80 grade pipe

TRUSTARC™ DW-A70L



AWS A5.29 E101T1-GM
ISO 18726 -A- T62 5 Mn1NiMo P M2 H5

- Complying NACE MR0175, Ni Content of less than 1%
- Shielding Gas: 80%Ar+20%CO₂

Chemical Composition of All Weld Metal (mass%)

C	Si	Mn	P	S	Ni	Mo
0.05	0.36	1.90	0.008	0.011	0.97	0.46

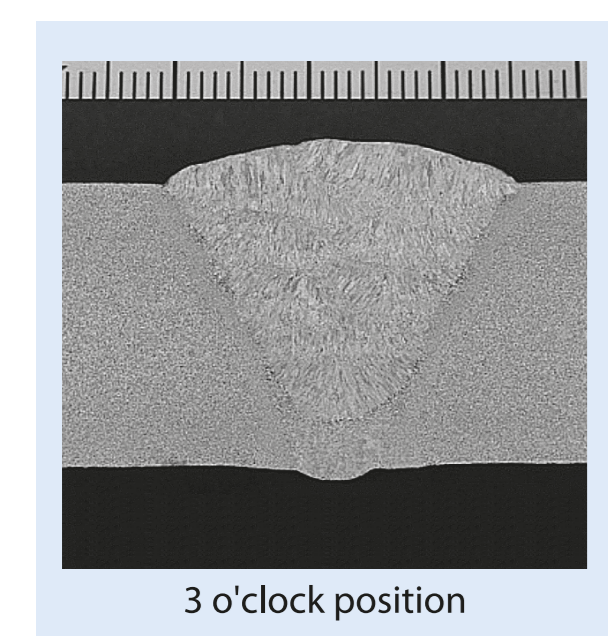
Mechanical Properties of All Weld Metal

Tensile properties				Notch toughness		
0.2%PS (MPa)	TS (MPa)	EI (%)	RA (%)	Absorbed energy: J		
				-50°C	-40°C	-30°C
663	739	21	63	Avg.72	Avg.87	Avg.93

Diffusible Hydrogen Content in Weld Metal (ml/100g)

Wire Dia.	1	2	3	4	Avg.
1.2mm	3.5	3.7	3.9	3.6	3.7

Macrostructure of Girth Welding



Welding Position	5G
Root & Hot Passes	GTAW TG-S60A (2layers)
Hot Pass	FCAW DW-A70L
Pass Sequence (FCW)	8passes/5layers
Pipe	Thickness: 21.4mm Outer diameter: 273mm Φ

All position welding of corrosion-resistant pipe

PREMIARC™ DW-N625P



AWS A5.34/A5.34M ENiCrMo3T1-4
ISO 12153 T Ni 6625 P M21 2

- Ni-Cr-Mo 625 Alloy
- Shielding Gas: 75-80%Ar+Bal.% CO₂

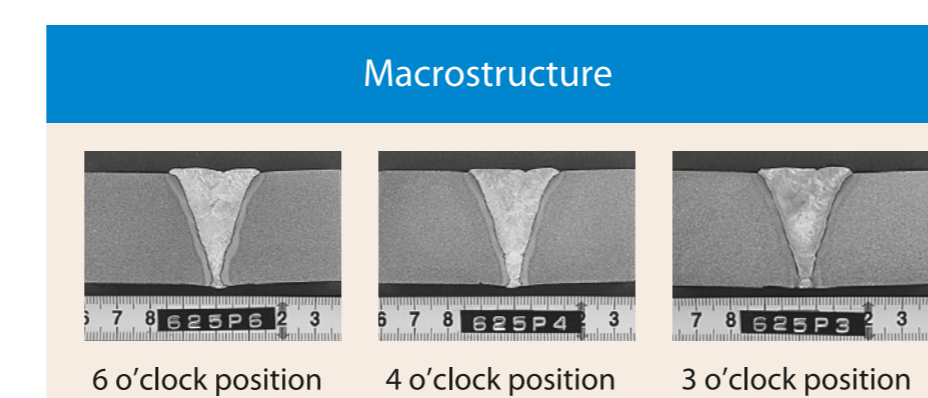
Chemical Composition of All Weld Metal (mass%)

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	Ti	Fe	Nb+Ta	Others
0.031	0.21	0.02	0.007	0.004	0.01	65.2	21.3	8.8	0.17	2	3.23	—

Mechanical Properties of All Weld Metal

Tensile properties			Absorbed Energy (J)		
0.2%PS (MPa)	TS (MPa)	EI (%)	0°C	-100°C	-196°C
			Avg.84	Avg.78	Avg.70

Macrostructure of Girth Welding



Welding Position	5G
Pipe	Thickness: 30mm Outer diameter: 267mm Φ
Welding Process	1-3 rd : GTAW TG-SN625 2.4mm 4-10 th : FCAW DW-N625P 1.2mm

Impact Test Results

Position	Test piece location in the weld metal	Test temp. °C	Absorbed Energy (J)
3 o'clock		0	Avg.96
		-30	Avg.93
		-100	Avg.87
		-196	Avg.82



Line-Up of TIG & MAG Wires for Girth Welding

API 5L Pipe Grade	Welding Pass	Temperature (°C)		
		-20	-40	-60
X42-X56	Root	TG-S50	TG-S 1N	
	Filler & Cap	DW-A50	DW-A55E	DW-A55L
X60	Root	DW-A50SR	DW-A55ESR	DW-A55LSR
	Filler & Cap	TG-S62	TG-S60A	
X65	Root	DW-A55E	DW-A55L	
	Filler & Cap	DW-A55ESR	DW-A55LSR	
X70	Root	TG-S62	TG-S60A	
	Filler & Cap	DW-A70L	DW-A62L	
X80	Root	TG-S80AM		
	Filler & Cap	DW-A70L	—	
X100	Root	TG-S80AM		
	Filler & Cap	DW-A80L	—	