

# FILARC PZ6113

## *A highly productive consumable for positional welding*

**FILARC PZ6113 represents the latest generation of all position rutile, low-hydrogen flux-cored wires. This multi-purpose wire is the most productive consumable available for manual and mechanised positional welding, including vertical down, and provides an excellent bead appearance. It is designed for use in pure CO<sub>2</sub> as well as Ar/CO<sub>2</sub> shielding gas. The wire is applied in all areas that involve positional welding of structural steel such as shipbuilding, offshore, civil construction and mobile machinery.**

FILARC PZ6113 is an extremely "welder friendly" wire with a soft, spatter-free arc that always operates in the spray arc mode. It is easy to obtain flat welds with a good penetration and smooth wetting onto the plate edges. The brittle slag is easily removed leaving behind a smooth rutile weld appearance. Typical positional welding defects such as lack of fusion and slag inclusions are avoided, due to the spray arc operation. The wire has a high tolerance for poor joint preparation. High quality one-sided root runs are made economically on ceramic backing. The wire has an excellent performance on zinc-silicate primed plate.

The wire formulation provides a fast freezing slag that supports the weld pool well in positional welding, enabling deposition rates which can not be equaled by stick electrodes or solid wires. Deposition rates in vertical up welding can reach up to 4 kg/h (100% duty cycle), making it the most productive consumable available for manual welding in this position. Welding parameters are optimised per welding position for maximum productivity, but one single setting can be selected for all-positions (230A), making it ideal for fit-up work.

Diffusible hydrogen satisfies the EN H5 classes for CO<sub>2</sub> and Ar/CO<sub>2</sub> mixed gases respectively tested under the conditions prescribed in the classification standard. Weld metal remains low-hydrogen over a wide envelope of welding parameters.

- **High deposition rate:** lower welding times, saves welding costs
- **all positions:** one wire for several applications, lower cost for welder training
- **Welder friendly:** easy to use, lower risk of defects
- **Excellent weld quality:** lower repair rate, higher production output, lower welding costs
- **Low hydrogen:** less risk of cracks, lower repair rates, lower welding costs



## Classification

SFA/AWS A5.20	EN 758
E71T-1C H4	T 42 2 P C 1 H5
E71T-1M H8	T 46 2 P M 1 H10

## Approvals

ABS	BV	CE / EN	CRS	DB	DNV	GL	LR	PRS	RINA	RS	VdTÜV
3SA, 3YSA	SA3 3YMH	13479	3YH10S	42.105.07	III YMS (H10)	3YH10S	S 3YS H15	3YH10S	2YS (C1), 3YS (M21)	3YHHS	04902

## Typical weld metal chemical composition(%), DC

Chemistry	C	Si	Mn	P	S
CO <sub>2</sub>	0.06	0.4	1.15	0.012	0.009
Ar/15-25%CO <sub>2</sub>	0.06	0.5	1.25	0.012	0.009

## Typical weld metal mechanical properties, DC

	Rm (MPa)	Rp0.2 (MPa)	A5 (%)	CVN (J)
CO <sub>2</sub>	571	505	26	-20°C: 135
Ar/15-25%CO <sub>2</sub>	601	535	25	-20°C : 128

## Deposition data in CO<sub>2</sub> and Ar/15-25%CO<sub>2</sub>

Diameter: 1.2 mm / stick-out: 20 mm / recovery: 85%

I (A)	V wire (m/min)	Dep. Rate (kg/h)
170	6.0	2.5
250	11.6	4.2
300	14.5	5.8

## Welding parameters

Current (A)	V wire (m/min)	Voltage (V)
<b>1G, 1F / PA</b>		
170-190	6.0-8.0	23-26 root*
180-280	6.0-12.0	25-30 fill
<b>2F / PB</b>		
180-300	6.0-14.0	24-31
<b>2G / PC</b>		
170-190	6.0-8.5	23-26 root*
180-260	6.0-10.0	25-29 fill
<b>3G-up/3F-up / PF</b>		
180-260	6.0-12.0	23-32 root*
180-280	6.0-12.0	24-30 fill

Current (A)	V wire (m/min)	Voltage (V)
<b>3F-down / PG</b>		
180-220	6.0-9.0	23-26
<b>4G / PE</b>		
Not recommended		root
180-260	6.0-10.0	24-28 fill
<b>4F / PD</b>		
180-250	6.0-10.0	23-28

Parameter settings FILARC PZ6113 –diameter 1.2 mm in Ar/CO<sub>2</sub> mixed gas. Increase the arc voltage by 1-2 V when using CO<sub>2</sub> shielding gas. \* Root pass on ceramic backing with rectangular groove. Limit current to 180A for positions 1G and 2G.



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