

MEGAFIL® 819 R



AWS A5.29: M21: E81T1-Ni1M-J H4
EN ISO 17632-A: M21: T 50 6 1Ni P M21 1 H5

CO₂: E81T1-Ni1C-J H4
CO₂: T 46 4 1Ni P C1 1 H5

WELDING POSITIONS:



FEATURES	BENEFITS	APPLICATIONS
<ul style="list-style-type: none"> Extremely low diffusible hydrogen weld deposit Low fumes and spatter Easy slag removal Able to bridge poor fit-up without burn-through Good impact toughness Smooth arc characteristic 	<ul style="list-style-type: none"> Minimized risk of hydrogen-induced cracking No re-drying Excellent all position welding Resists cracking in severe applications Reduces clean-up time, minimizes risk of inclusions Increases productivity, reduces part rework/ rejection Root welding on ceramic backing Automatic root welding on ceramic backing 	<ul style="list-style-type: none"> Steel structures Offshore structures Pipelines Non-alloy and fine grain steels Vessels General fabrication Heavy equipment Single and multi-pass welding

WIRE TYPE	Gas shielded rutile flux-cored wire with rapidly solidifying slag
SHIELDING GAS	75-85% Argon (Ar) / Balance Carbon Dioxid (CO ₂); 100% Carbon Dioxid (CO ₂); Gas Flow 12-20 l/min (25-42 cfh)
TYPE OF CURRENT	Direct Current Electrode Positive (DCEP)
STANDARD DIAMETERS	Ø 1.2 mm (0.045")
TYPICAL DIFFUSIBLE HYDROGEN*	< 3.0 ml / 100 g; Guaranteed for the total processing time < 4.0 ml / 100 g maximum (AWS Spec)
RE-DRYING	Not required due to seamless wire design.
STORAGE	The same conditions as for solid wire. Product should be stored in a dry, enclosed environment, in its original undamaged packaging

*Measurement technique is the carrier gas method according to AWS and ISO

MATERIALS TO BE WELDED*

Shipbuilding steels		A, B, D, AH 32 - EH 36
Unalloyed structural steels	Rel ≤ 500 MPa	S185 - S355, A 106 Gr.B, A 333 Gr. 6
Boiler steels	Rel ≤ 500 MPa	P235GH - P485GH up to A516; A537, A455
Pipe steels	Rel ≤ 500 MPa	P235T1/T2 - P485NL2; L210 - L485MB up to A 572
Fine grain structural steels	Rel ≤ 500 MPa	S235 - S500(NL1,2) up to A 572
Steels to API-standard	Rel ≤ 500 MPa	X42 - X70

*) The specified base materials are not complete and should only be seen as examples. The selection of the appropriate combination of steel and welding consumable should follow the specific mechanical strength and toughness requirements.

ALL WELD METAL CHEMISTRY (%) (typical values for mixed gas 82% Ar / 18% CO₂)

Carbon (C)	0.05	Nickel (Ni)	0.8
Manganese (Mn)	1.2	Molybdenum (Mo)	-
Silicon (Si)	0.5	Chromium (Cr)	-
Sulphur (S)	0.015		
Phosphorus (P)	0.015		

ALL WELD METAL MECHANICAL PROPERTIES (for mixed gas 82% Ar / 18% CO₂ and 100% CO₂)

Mechanical tests	Typical values MPa (ksi)	ISO Specification MPa (ksi)	
	Both gases	Mixed Gas 82% Ar / 18% CO ₂	100% CO ₂
Tensile Strength Rm	620 (90)	560—720 (80 - 104)	550 - 680 (80 - 99)
Yield strength Rp0.2	550 (80)	> 500 (72)	> 460 (67)
Expansion A5	26%	> 22%	> 22%

CHARPY V-NOTCH IMPACT VALUES (for mixed gas 82% Ar / 18% CO₂ and 100% CO₂)

Mechanical Tests	Typical values [J] (ft.lbf)		ISO Specification [J] (ft.lbf)	
	82% Ar / 18% CO ₂	100% CO ₂	82% Ar / 18% CO ₂	100% CO ₂
-40 °C	90 (66)	60 (44)	> 47 (35)	> 47 (35)
-60 °C	60 (44)		> 47 (35)	

APPROVALS:CE, DNV·GL

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