MEGAFIL® 713 R

AWS A5.20: M21: E71T-1M-J H4
AWS A5.36: M21: E71T1-M21A4-CS1-H4
EN ISO 17632-A: M21: T 46 4 P M21 1 H5

CO_2: E71T-1C-J H4
CO_2: E71T1-C1A0-CS1-H4
CO_2: T 46 2 P C1 1 H5

WELDING POSITIONS:

FEATURES	BENEFITS	APPLICATIONS
• Extremely low diffusible hydrogen weld deposit	• Minimized risk of hydrogen-induced cracking	• Automatic and mechanized welding
• Low fumes and spatter	• No re-drying	• Steel structures
• Easy slag removal	• Excellent all position welding	• Offshore structures
• Able to bridge poor fit-up without burn-through	• Resists cracking in severe applications	• Pipelines
• Good impact toughness	• Reduces clean-up time, minimizes risk of inclusions	• Non-alloy and fine grain steels
• Smooth arc characteristic	• Increases productivity, reduces part rework/ rejection	• Vessels
	• Root welding on ceramic backing	• General fabrication
	• Automatic root welding on ceramic backing	• 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 Dioxide (CO_2); 100% Carbon Dioxide (CO_2); Gas flow 12-18 l/min (25-38 cfh)
TYPE OF CURRENT	Direct Current Electrode Positive (DCEP)
STANDARD DIAMETERS	Ø 1.0 - 2.4 mm (0.039 - 3/32“)
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 undameged 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 ≤ 355 MPa	S185 - S355, A106 Gr. B, A333 Gr. 6
Boiler steels	Rel ≤ 355 MPa	P235GH - P355GH
Pipe steels	Rel ≤ 460 MPa	P235T1/T2 - P460NL2; L210 - L445MB
Fine grain structural steels	Rel ≤ 460 MPa	S235 - S460QL1
Steels to API-standard	Rel ≤ 460 MPa	X42 - X60
*) 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% CO_2)

Carbon (C)	0.05	Nickel (Ni)	-
Manganese (Mn)	1.3	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% CO_2)

Mechanical tests	Typical values MPa (ksi)	ISO Specification MPa (ksi)
Tensile Strength Rm	600 (87)	550 - 680 (80 - 99)
Yield strength Rp0.2	530 (77)	> 460 (67)
Expansion A5	26%	22%

CHARPY V-NOTCH IMPACT VALUES (for mixed gas 82% Ar / 18% CO_2 and 100% CO_2)

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
-20 °C	100 (74)	70 (52)	> 47 (35)	> 47 (35)
-40 °C	70 (52)		> 47 (35)	

APPROVALS: CE, TÜV, DB, ABS, BV, CWB, DNV·GL, LR, RINA, RMRS
Please contact the manufacturer to learn the present scope of approvals