PRODUCT DATA SHEET

FLUX-CORED GAS SHIELDED WIRES

WCD 6808

MEGAFIL® 819R

SUMMARY

- Unique seamless wire manufacturing process
- Seamless wire prevents moisture pick-up and provides a low-hydrogen deposit
- Fast-freezing slag
- Excellent arc stability
- Good low-temperature impact toughness
- Cracked-Tip Opening Displacement (CTOD) tested; data available upon request

BENEFITS

- Provides very consistent chemical and mechanical properties
- Minimises risk of hydrogen cracking, even after considerable atmospheric exposure
- Suitable for all-position welding with a flat bead contour
- Helps produce welds of consistent appearance and quality
- Minimises risk of cracking in many critical applications
- Weld deposit is able to absorb energy and resist crack formation and propagation

CLASSIFICATION

- AWS A5.29: E81T1-Ni1C H4, E81T1-Ni1MJ H4
- AS/NZS ISO: 17632-B: T55 5 T1-1M P-U H5
- AS/NZS ISO: 17632-B-T55 3 T1-1C A N2-U H5

APPLICATION

- Single or multi-pass welding
- Heavy equipment
- Storage vessels
- Structural fabrication
- Offshore
- HSLA steels
- Pipeline
- General fabrication
- Weathering steels

OTHER

- **Slag System:** Fast-freezing, rutile-type, flux-cored wire
- **Shielding Gas:** 75-85% Argon (Ar)/Balance Carbon Dioxide (CO2), 100% CO2, 35-50 cfh (17-24 l/min)
- **Type of Current:** Direct Current Electrode Positive (DCEP)
- **Standard Diameters:** 1.2mm and 1.6mm
- **Re-Drying:** Not recommended
- **Storage:** Product should be stored in a dry, enclosed environment, and in its original intact packaging

TYPICAL DIFFUSIBLE HYDROGEN*

HYDROGEN EQUIPMENT	82% Ar/ 18% CO_2	100% CO_2
Gas Chromatography	2.3 ml/100 g	2.3 ml/100 g

TYPICAL ALL WELD METAL CHEMICAL ANALYSIS

Shieiding Gas	C	Mn	Si	P	S	Ni	V
82% Ar/ 18% CO_2	0.03	1.30	0.49	0.012	0.011	0.86	0.02
100% CO_2	0.02	0.80	0.23	0.014	0.011	0.87	0.02

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (AS WELDED)

MECHANICAL TESTS	82% Ar/ 18% CO_2	100% CO_2
Tensile Strength	607 MPa	565 MPa
Yield Strength	558 MPa	520 MPa
Elongation	26%	27%

TYPICAL ALL WELD METAL MECHANICAL PROPERTIES (PWHT 2 HOURS 621°C)

MECHANICAL TESTS	82% Ar/ 18% CO_2
Tensile Strength	593 MPa
Yield Strength	524 MPa
Elongation	25%

TYPICAL CHARPY V-NOTCH IMPACT VALUES (AS WELDED)

CVN TEMPERATURES	82% Ar/ 18% CO_2	100% CO_2
Avg. at -30°C		47 J
Avg. at -40°C	95 J	20 J
Avg. at -50°C	68 J	

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TYPICAL CHARPY V-NOTCH IMPACT VALUES (PWHT 2 HOURS, 621°C)

CVN TEMPERATURES	82% Ar/ 18% CO_2
Avg. at -30°C	95 J
Avg. at -40°C	88 J

PACKAGING DATA

WIRE SIZE (MM)	PART NUMBER	PACKAGING TYPE
1.2	81915B	16kg Spool
1.6	81933B	16kg Spool

OPERATIONAL DATA

WIRE SIZE (MM)	WELD POSITION	AMPS	VOLTS	WIREFEED SPEED	DEPOSITION RATE	CONTACT TIP TO WORK DISTANCE (MM)
				M/MIN	KG/HR	
1.2	All Position	150	22.5	4.4	1.7	16
1.2	All Position	175	23.5	5.7	2.2	16
1.2	All Position	200	24.0	7.1	2.8	19
1.2	All Position	225	24.5	8.3	3.3	19
1.2	Flat & Horizontal	250	26.0	9.6	3.8	19
1.2	Flat & Horizontal	300	27.0	12.2	4.8	19
1.6	All Position	200	23.5	3.0	2.1	19
1.6	All Position	225	24.0	3.6	2.5	25
1.6	All Position	250	24.5	4.4	3.1	25
1.6	All Position	275	25.9	5.2	3.6	25
1.6	Flat & Horizontal	300	25.5	6.0	4.2	25
1.6	Flat & Horizontal	350	26.5	7.6	5.3	25
1.6	Flat & Horizontal	400	27.0	9.2	6.4	25

- Maintaining a proper welding procedure - including pre-heat and interpass temperatures - may be critical depending on the type and thickness of steel being welded.
- See above: This information was determined by welding using 75% Argon (Ar)/25% Carbon Dioxide (CO_2) shielding gas with a flowrate between 17-24 l/min. When welding using 100% Carbon Dioxide (CO_2) shielding gas, increase voltage by approximately one volt.
- All positions include: Flat, Horizontal, Vertical Up and Overhead.

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