

Outershield MC420N-H

Metal cored wire for applications that need to be normalized

Classification

A5.28/A5.28M : E70C-G H4
EN 758 : T 38 Z Z M M 2 H5

Note: the above mentioned classifications are an indication of the weld metal properties in the as welded condition. However, the Outershield MC420N-H is designed to be used only in the normalized condition. As neither AWS nor EN has included weld metal properties in the normalized condition, the wire cannot be classified for the condition it is designed for.

General description

All position high efficiency mix gas shielded metal cored wire

Excellent arc characteristics, few silicates and virtually no spatter, excellent wire feeding

High resistance to porosity

Designed to withstand normalizing treatment (4h 900°C)

Mechanical properties after normalizing meet base material requirements

Very low hydrogen ($H_{DM} < 5 \text{ ml/100g}$)

Only to be used in normalized condition!

Welding positions



PA/1G



PB/2F



PC/2G



PF/3G up



PE/4G

ISO/ASME

Current type/Shielding gas

DC +

Ar+ (>5-25)% CO₂ (EN 439: M21)

15-25 l/min

Chemical composition (w%), typical, all weld metal

Shielding gas	C	Mn	Si	P	S	Ni	H _{DM} ml/100g
M21	0.03	0.6	0.3	0.017	0.023	2.9	<5

Mechanical properties, all weld metal

	Shielding gas	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V (J) -50°C
Typical values:	M21	N	353	493	32	57

N = 900°C/4h

Packaging and available sizes

Unit type	Net weight/unit (kg)	Diameter (mm)
Wire reel B300	15	X

Outershield MC420N-H: rev. EN 20

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Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

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Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S185, S235, S275, S355
Ship plates	ASTM A131	Grade A, B, D, AH32 to EH36
Boiler & pressure vessel steel	EN 10028-2	P235GH, P265GH, P295GH, P355GH
	EN 10028-3	P275N, P355N
Fine grained steel	EN 10113-2	S275N, S275NL, S355N, S355NL

The wire is only applicable for materials that will be normalized after welding

In principle only applicable for materials that will be normalized after welding

Calculation data

Diameter (mm)	Arc mode	Electrical Stick-out (mm)	Wire feed speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/kg weld metal
1.2	spray-arc	20	445	130	20-22	1.6	1.20
			700	180	23-25	2.5	1.20
			950	220	25-27	3.4	1.20
			1270	265	27-29	4.5	1.20
			1590	305	30-32	5.9	1.20

Welding parameters, optimum fill, shielding gas Ar + (>5 - 25)% CO₂

Diameter (mm)	Current/ Voltage	Welding position				
		PA/1G	PB/2F	PC/2G	PF/3G up	PE/4G
1.2	(A)	230-380	230-380	230-300	130-170	140-175
	(V)	26-36	26-36	26-30	15-17	16-17