

Innershield® NS®-3ME

Self-shielded cored wire

Classification

AWS A5.20/A5.20M : E70T-4
EN ISO 17632-A : T 46 Z V N 3

General description

NS-3ME is a self shielded wire for high deposition rate flat and horizontal welding where impact properties are not required

Recommended for heavy sections or crack-sensitive applications

Can be used for rail joint welding

Welding positions



ISO/ASME PA/1G PB/2F

Current type

DC +

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

C	Mn	Si	P	S	Al
0.23	0.45	0.25	0.006	0.006	1.40

Mechanical properties, typical, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation %	Impact ISO-V(J)
Required:	AWS A5.20	460	530-670	22	not required
Typical values	AW	470	640	27	

Packaging and available sizes

Unit type	Diameter (mm)		
	2.0	2.4	3.0
6.35 kg coil 14C	X		
12.5 kg coil 25RR	X		
22.68 kg coil 50C	X	X	X

Innershield® NS®-3ME: rev. EN 21

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Materials to be welded

Steel grades/Standard	Type
General structural steel	
EN 10025	S185, S235, S275, S355
Ship plates	
ASTM A131	Grade A, B, D, AH32 to DH36
Cast steel	
EN 10213-2	GP240R
Pipe material	
EN 10208-1	L210, L240, L290, L360
EN 10208-2	L240, L290, L360, L415
API 5LX	X42, X46, X52, X60
EN 10216-1/	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
Fine grained steel	
EN 10025 part 3	S275, S355, S420
EN 10025 part 4	S275, S355, S420

Calculation data at normal setting

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed cm/min	Current (approx. A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/kg Weldmetal
2.0	50	500	250	29	5.0	1.18
		635	290	30	6.3	1.18
		760	320	31	7.6	1.18
2.4	70	280	250	28	3.8	1.16
		580	400	31	8.1	1.16
		700	450	32	10.0	1.16
3.0	70	380	400	28	7.7	1.23
		450	450	29	9.0	1.23
		570	550	31	12.0	1.23
2.0	95	530	450	35	11.3	1.23
		900	600	38	17.9	1.23

Welding parameters, optimum fill passes

Diameter (mm)	Welding position	Welding position	
		PA/1G	PB/2F
2.0	Wire feed speed (cm/min.)	635	635
	Current (A)	290	290
	Voltage (V)	30	30
2.4	Wire feed speed (cm/min.)	580	580
	Current (A)	400	400
	Voltage (V)	31	31
3.0*	Wire feed speed (cm/min.)	440	440
	Current (A)	445	445
	Voltage (V)	29	29
3.0**	Wire feed speed (cm/min.)	760	
	Current (A)	550	
	Voltage (V)	37	

* Stick-out 70mm - ** Stick-out 95mm

Remarks/ Application advice

Multi-pass fillet and lap welds

Single passes 4.5 to 9mm fillet and lap welds (1F)

Crack resistant fillets on higher strength steels where required joint strength can be obtained by using the proper fillet size

Joint welding of rail steel profiles with placed copperbacking

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