

Innershield® NS®-3M

Self-shielded cored wire

Classification

AWS A5.20-95 : E70T-4

General description

NS-3M 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 +

Approvals

DB

+

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

C	Mn	Si	P	S	Al
0.23	0.45	0.26	0.006	0.006	1.40

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation %	Impact ISO-V(J)
Required:	AWS A5.20-95	min. 400	480	22	not required
Typical values	AW	450	570	26	

Packaging and available sizes

Unit type	Net weight/unit (kg)	Diameter (mm)		
		2.0	2.4	3.0
Coils 14C	6.35	X		
Spool 25RR	12.5	X		
Coils 50C	22.68	X	X	X

Innershield® NS®-3M: rev. EN 15

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Suggestions for use

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.

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 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/ EN 10217-1	P235T1, P235T2, P275T1 P275T2, P355N
Fine grained steel	EN 10113-2	S275, S355, S420
	EN 10113-3	S275, S355, S420
Railway		

Calculation data at normal setting

Diameter (mm)	Electrical Stick-out (mm)	Wire feed speed		Current (approx. A)	Arc Voltage (V)	Deposition Rate (kg/h)	kg Wire/ kg Weldmetal
		inch/min	cm/min				
2.0	50	200	500	250	29	5.0	1.18
		250	635	290	30	6.3	1.18
		300	760	320	31	7.6	1.18
2.4	70	110	280	250	28	3.8	1.16
		230	580	400	31	8.1	1.16
		275	700	450	32	10.0	1.16
3.0	70	150	380	400	28	7.7	1.23
		175	450	450	29	9.0	1.23
		225	570	550	31	12.0	1.23
2.0	95	210	530	450	35	11.3	1.23
		355	900	600	38	17.9	1.23

Welding parameters, optimum fill passes

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

* Stick-out 70mm

** Stick-out 95mm

v wire feed speed