

# Innershield® NR® 211 MP

## CLASSIFICATION

AWS A5.20	E71T-11	A-Nr	1
AWS A5.36	E71T-11-AZ-CS3	F-Nr	6
EN ISO 17632-A	T 42 Z Z N 1 H10	9606 FM	1

## GENERAL DESCRIPTION

Versatile welding capability on a variety of base materials  
 High operator appeal and good bead appearance  
 Easy slag removal  
 Fast freezing characteristics accommodate poor fit-up

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PG/3Gd



PE/4G



PJ/5Gd

## CURRENT TYPE

DC -

## APPROVALS

BV	LR
+	AWS

## CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

C	Mn	Si	P	S	Al
0.21	0.65	0.25	0.010	0.003	1.3

## MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	Yield strength (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Impact ISO-V(J)
Required: AWS A5.20		min. 400	480	20	not required
Typical values	AW	450	610	22	

## PACKAGING AND AVAILABLE SIZES

Diameter (mm)	0.9	1.2	1.7	2.0
6.35 kg coil 14C	X	X	X	X
11.34 kg coil 22RR	X	X		
22.68 kg coil 50C			X	X

Innershield® NR® 211 MP: rev. C-EN03-11/05/16

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## EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Standard	Type
<b>General structural steels</b>	
EN 10025 part 2	S185, S235, S275, S355
<b>Ship plates</b>	
ASTM A131	Grade A, B, D, AH32 to DH36
<b>Cast steels</b>	
EN 10213-2	GP240R
<b>Pipe material</b>	
EN 10208-1	L210, L240, L290, L360
EN 10208-2	L240, L290, L360
API 5LX	X42, X46, X52
EN 10216-1/	P235T1, P235T2, P275T1
EN 10217-1	P275T2, P355N
<b>Boiler &amp; pressure vessel steels</b>	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
<b>Fine grained steels</b>	
EN 10025 part 3	S275, S355
EN 10025 part 4	S275, S355

## CALCULATION DATA

Diameter (mm)	Electrical stick-out (mm)	Wire Feed Speed (cm/min)	Current (A)	Arc Voltage (V)	Deposition rate (kg/h)	kg wire/ kg weldmetal
0.9	10	125	30	14	0.3	1.22
		230	90	16	0.6	1.22
		280	120	16.5	0.8	1.22
1.1	14	180	120	15	0.5	1.22
		280	160	17	1.0	1.22
		330	170	18	1.2	1.22
1.7	19	100	120	15	0.8	1.22
		190	190	18	1.5	1.22
		440	320	23	3.5	1.22
2.0	19	130	180	16	1.4	1.09
		190	250	18	2.2	1.09
		380	350	22	4.3	1.09
2.4	19	130	235	16	2.0	1.10
		140	250	18	2.3	1.10
		250	370	20	4.2	1.10

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)		Welding positions				
		PA/1G PB/2F	PC/2G	PF/3Gup	PG/3Gdown PJ/5Gdown	PE/4G
0.9	Wire feed speed [cm/min]	180	180	150	230	230
	Current (A)	65	65	50	85	85
	Voltage (V)	15	15	14.5	16	16
1.1	Wire feed speed [cm/min]	230	230	200	280	280
	Current (A)	140	140	130	160	160
	Voltage (V)	16	16	16	17	17
1.7	Wire feed speed [cm/min]	440	250	190	300	300
	Current (A)	320	230	190	280	280
	Voltage (V)	23	19.5	18	21	21
2.0	Wire feed speed [cm/min]	330	190	190	230	190
	Current (A)	320	250	320	250	250
	Voltage (V)	21	18	19.5	18	18
2.4	Wire feed speed [cm/min]	230	180	230	140	140
	Current (A)	350	275	350	250	250
	Voltage (V)	19.5	19	19.5	18	18