

# Innershield® NR® 203 Ni1

## CLASSIFICATION

AWS A5.29/A5.29M : E71T8-Ni1  
 EN ISO 17632-A : T 42 4 1Ni Y N 1 H10

## GENERAL DESCRIPTION

**Self shielded: easiest equipment arrangement**  
**All position welding**  
**Easy to weld in vertical up position**  
**All passes**  
**Good impact and CTOD toughness**

## WELDING POSITIONS



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PG/3Gdown PF/5G up PG/5Gdown PE/4G

## CURRENT TYPE

DC -

## APPROVALS

ABS	BV	DNV	GL	LR	RINA	TÜV
3SA,3YSA	SA3YMH	IIYMSH10	3YSH10	3S,3YSH15	3S,3YS	

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

C	Mn	Si	P	S	Ni	Al
0.08	1.1	0.27	0.008	0.003	0.9	0.85

## 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)	
				-29°C	
Required: AWS A5.29	min. 400	480-620	20	27	
Typical values	AW	465	540	26	115

## PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4
Unit : 6.35 kg coil 14C	X	
22.68 kg coil 50C	X	X

Innershield® NR® 203 Ni1: rev. EN 23

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## MATERIALS TO BE WELDED

Steel grades/Standard	Type
<b>General structural steel</b>	
EN 10025 part 2	S185, S235, S275, S355
<b>Ship plates</b>	
ASTM A131	Grade A, B, D, AH32 to DH36
<b>Cast steel</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 steel</b>	
EN 10028-2	P235GH, P265GH, P295GH, P355GH
<b>Fine grained steel</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
2.0	19	125	145	16	1.10	1.30
		230	235	20	1.95	1.30
		355	310	23	3.15	1.30
2.4	19	125	215	18	1.60	1.20
		240	315	21	3.25	1.20
		330	385	24	4.30	1.20

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)		Welding positions						
		PA/1G	PB/2F	PC/2G	PF/3Gup	PF/5Gup	PG/3Gdown PG/5Gdown	PE/4G
2.0	Wire feed speed (cm/min)	280	330	230	200	200	200	200
	Current (A)	255	300	235	215	215	215	215
	Voltage (V)	21	22	20	19	19	18	19
2.4	Wire feed speed (cm/min)	280	280	215	180			
	Current (A)	345	345	290	250			
	Voltage (V)	22	22	19.5	19			

## REMARKS/APPLICATION ADVICE

For mild and higher strength steel, not exceeding the yield strength range of the electrode weld deposit  
 General plate fabrication, including bridge construction, hull plate and stiffener welding on ships and barges, offshore  
 For semi- and full automatic welding