

# Innershield® NR® 233

## CLASSIFICATION

AWS A5.20	E71T-8	A-Nr	1
AWS A5.36	E71T8-A2-CS3-H16	F-Nr	6
EN ISO 17632-A	T 42 3 Y N 2 H10	9606 FM	1

## GENERAL DESCRIPTION

**Self shielded: easiest equipment arrangement**

**Due to new production technology and formulation: welder friendly wire with wide range of parameter settings**

**Forgiving arc, with increased penetration gives better quality welds with great bead appearance**

**High deposition rate, even in out of position welding**

**Good impact values**

**NR-233 has been developed to minimize gas marking, even after the electrode has been exposed to the atmosphere**

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G



PH/5Gu

## CURRENT TYPE

DC -

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

C	Mn	Si	P	S	Al
0.16	0.65	0.21	0.010	0.003	0.60

## 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 A5.20		min. 400	480	22	27
Typical values	AW	440	570	26	40

## PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	1.8
5.7 kg plastic spool	X	
11.3 kg plastic spool	X	X

Innershield® NR® 233: rev. C-EN22-01/02/16

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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, L415
API 5LX	X42, X46, X52, X60
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
1.6	13-32	380	220	17-19	1.9	1.26
		510	245	19-21	2.5	1.31
		640	270	21-23	3.0	1.35
		760	295	23-25	3.5	1.35
		890	315	25-27	4.3	1.31
1.8	19-25	250	185	17-18	1.6	1.25
		380	250	18-19	2.5	1.24
		510	295	20-21	3.2	1.25
		640	330	22-23	4.0	1.26
		760	355	23-24	4.8	1.26

## REMARKS/APPLICATION ADVICE

Vertical up fillet and groove welds  
 Overhead fillet and groove welds  
 Seismic structural steel erection  
 General structural steels erection  
 Ship and barge fabrication