

# Innershield® NR<sup>®</sup> 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<sup>®</sup> 233: rev. C-EN22-01/02/16

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.eu](http://www.lincolnelectric.eu) for any updated information.  
Fumes: Safety Data Sheets (SDS) are available on our website.

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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

FCAW

## 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