

## NIMROD 657

MMA (SMAW)

## BASIC MMA ELECTRODE FOR ALLOY 657/671

## PRODUCT DESCRIPTION

MMA electrode made on a special nickel-chromium core wire, with a basic lime-fluorspar flux covering.  
Recovery is approx 160% with respect to core wire, 65% with respect to whole electrode.

## CLASSIFICATIONS

AWS A5.11M ENiCr-4

## ASME IX QUALIFICATION

QW432 F-No 43

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PE/4G

## CHEMICAL COMPOSITION (WELD METAL WT %)

	C	Mn	Si	S	P	Cr	Ni	Nb	Fe	N	Cu
Min.	--	--	--	--	--	48	bal	1.0	--	--	--
Max.	0.10	1.5	1.0	0.02	0.02	52	--	2.5	1.0	0.16	0.25
Typical	0.07	1.0	0.5	0.01	0.01	50	47	1.8	0.5	0.07	0.05

## ALL-WELD MECHANICAL PROPERTIES

As welded	Min. Nimrod 657	Typical Nimrod 657	IN-657 (as cast)
Tensile strength [MPa]	760	830-985	600-700
0.2% proof strength [MPa]	--	570-725	330-400
Elongation [%] 4d	--	2-4	10-40
Hardness [HV]	--	340	210-260

Note: Weld metal tensile properties are much higher than those of as-cast IN-657, mainly because pre-ageing takes place during multipass welding. IN-657 responds similarly at high temperature and differences between the two are effectively eliminated during service.

## TYPICAL OPERATING PARAMETERS, DC +VE OR AC(OCV:70V)

Diameter (mm)	2.5	3.2	4.0
min. A	70	85	110
max. A	95	120	160

## PACKAGING DATA

	Diameter (mm)	Length (mm)	Item number	No of pieces		Weight (kg)	
				can	box	can	box
METAL CAN	2.5	300	NIM657-25	150	450	3.5	10.5
	3.2	350	NIM657-32	87	261	3.8	11.4
	4.0	350	NIM657-40	64	192	4.0	12.0

Redrying: 250 – 300°C/1-2h to restore to as-packed condition. Maximum 350° C, 3 cycles, 10h total.

## FUME DATA (WT % TYPICAL)

Fe	Mn	Ni	Cr	Mo	Cu	F	OES (mg/m³)
1	2	2.5	8	0.1	0.1	23	0.6