

## CLASSIFICATION

AWS A5.1	E 6013	A-Nr	1
ISO 2560-A	E 42 0 RC 11	F-Nr	2
		9606 FM	1

## GENERAL DESCRIPTION

Rutile general purpose, all position electrode, including vertical down  
 Applicable for "clean" structural steel  
 Smaller diameters excellent for hobby market  
 Very suitable for low open circuit voltage transformers

## WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PF/3Gu



PG/3Gd



PE/4G

## CURRENT TYPE

AC / DC -

## APPROVALS

ABS	BV	GL	LR	RMRS	DNV
2	2	2	2	2	2

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

C	Mn	Si
0.07	0.5	0.5

## 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) 0°C
Required: AWS A5.1 ISO 2560-A Typical values	min. 330 min. 420 520	min. 430 500-640 550	min. 17 min. 20 26	not required min. 47 60
AW				

## PACKAGING AND AVAILABLE SIZES

	Diameter (mm)	2,5	3,2	4,0
	Length (mm)	350	350	350
Carton + PE foil	Pieces / unit	155	155	120
	Net weight/unit (kg)	2.8	4.8	5.4

Identification Imprint: 6013/OMNIA Tip Color: none

Omnia® rev. C-EN24-01/02/16

## EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Code	Type
<b>General structural steels</b>	
EN 10025	S185, S235, S275
<b>Ship plates</b>	
ASTM A 131	Grade A, B, D
<b>Cast steels</b>	
EN 10213-2	GP240R
<b>Pipe material</b>	
EN 10208-1	L210, L240, L290
EN 10208-2	L240, L290
API 5LX	X42, X46
EN 10216-1/EN10217-1	P235, P275
<b>Boiler &amp; pressure vessel steels</b>	
EN 10028-2	P235, P265, P295
<b>Fine grained steels</b>	
EN 10025 part 3	S275
EN 10025 part 4	S275

## CALCULATION DATA

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time	Energy	Dep. rate	Weight/ 1000 pcs (kg)	Electrodes/ kg weldmetal B	kg electrodes/ kg weldmetal 1/N
			- per electrode at max. current - [S]*	E[kJ]	H[kg/h]			
2.5x350	65-90	AC	52	108	0.8	18.5	85	1.59
3.2x350	95-130	AC	65	229	1.0	31.1	53	1.67
4.0x350	130-160	AC	72	333	1.3	43.6	37	1.61

\*Stub end 35mm

## WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions					
	PA/1G	PB/2F	PC/2G	PF/3G up	PG/3G down	PE/4G
2.5	80A	75A	75A	75A	75A	75A
3.2	120A	115A	125A	115A	125A	115A
4.0	175A	165A	160A	160A	170A	160A

## REMARKS / APPLICATION ADVICE

Vertical down only applicable for "clean" structural steel