

Omnia® 46**CLASSIFICATION**

AWS A5.1 : E6013
 ISO 2560-A : E 38 0 R 11

GENERAL DESCRIPTION

Rutile general purpose, all positions electrode
 Applicable for "clean" structural steel (2.5, 3.2, 4.0 mm)
 Smaller diameters excellent for hobby market
 Very suitable for low open circuit voltage transformers (min. OCV 42 V)

WELDING POSITIONS**CURRENT TYPE**

AC / DC -

APPROVALS

ABS	BV	DNV	GL	LR	TÜV
2	2	2	2	2	+

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

C	Mn	Si
0.06	0.5	0.45

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) 0°C
Required: AWS A5.1 ISO 2560-A		min. 331 min. 420	min. 414 500-640	min. 17 min. 20	not required min. 47
Typical values	AW	430	480	26	60

PACKAGING AND AVAILABLE SIZES

	Diameter (mm)	2.0	2.5	3.2	3.2	4.0	4.0	5.0
	Length (mm)	300	350	350	450	350	450	450
Unit: carton box	Pieces / unit	370	250	175	150	110	95	55
	Net weight/unit (kg)	4.2	4.8	5.3	6.2	2.0	2.3	5.8
Unit : Linc Pack	Pieces / unit	89	54	33	-	22	-	-
	Net weight/unit (kg)	1.0	1.0	1.0	-	1.0	-	-

Identification Imprint: 6013-OMNIA 46 Tip Color: yellow

Omnia® 46: rev. EN 24

Omnia[®] 46

MATERIALS TO BE WELDED

Steel grades/Code	Type
General structural steels	
EN 10025	S185, S235, S275
Ship plates	
ASTM A 131	Grade A, B, D
Cast steels	
EN 10213-2	G P 240R
Pipe material	
EN 10208-1	L210, L240, L290
EN 10208-2	L240, L290
API 5LX	X42, X46
EN 10216-1/EN10217-1	P235, P275
Boiler & pressure vessel steel	
EN 10028-2	P235, P265, P295
Fine grained steels	
EN 10025 part 3	S275
EN 10025 part 4	S275

CALCULATION DATA

Sizes		Current range (A)	Current type	Arc time (S)*	Energy - per electrode at max. current - E(kJ)	Dep. rate H(kg/h)	Weight/ 1000 pcs (kg)	Electrodes/ kg weld-metal B	kg electrodes/ kg weldmetal 1/N
Diam. x length (mm)	Current range (A)								
2.0x300	50-60	AC	43	57	0.5	11.4	154	1.68	
2.5x350	70-90	AC	68	134	0.6	19.2	84	1.60	
3.2x350	90-125	AC	80	220	0.9	30.3	50	1.51	
3.2x450	100-135	AC	102	303	0.9	41.3	38	1.56	
4.0x350	140-190	AC	74	323	1.5	45.5	33	1.49	
4.0x450	150-200	AC	95	456	1.5	62.1	26	1.58	
5.0x450	180-240	AC	115	662	1.8	105.5	17	1.75	

*Stub end 35mm

WELDING PARAMETERS, OPTIMUM FILL PASSES

Diameter (mm)	Welding positions							
	PA/1G	PB/2F	PC/2G	PF/3Gup	PG/3Gdown	PE/4G	PF/5Gup	PG/5Gdown
2.0	55A	55A	55A	50A	55A		50A	55A
2.5	80A	85A	85A	80A	85A	85A	80A	85A
3.2	110A	115A	115A	110A	115A	110A	110A	115A
4.0	170A	175A	175A	175A	180A	175A	175A	180A
5.0	220A	230A		230A				