

## High recovery rutile electrode

### Classification

AWS A5.1-91 : E7024  
EN 499-94 : E 42 0 RR 73

### General description

Rutile electrode for fillet welds and horizontal V- and X-welds

180% recovery

Very high welding speed

Smooth weld appearance

Self releasing slag

### Welding positions



ISO/ASME PA/1G PB/2F PC/2G

### Current type

AC / DC electr. +/-

### Approvals

ABS	BV	CRS	DNV	FORCE	GL	LR	RINA	RMRS
2Y	2Y	2Y	2	+	2Y	2Y	2	2Y

### Chemical composition (w%), typical, all weld metal

C	Mn	Si
0.07	1.0	0.35

### Mechanical properties, 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 A5.1-91		min. 399	min. 482	min. 17	not required
EN 499-94		min. 420	500 – 640	min. 20	min. 47
Typical values	AW	450	525	27	75

### Packaging, available sizes and identification

	Diameter (mm)	4.0	5.0	6.3
	Length (mm)	450	450	450
Unit: Box	Pieces / unit (nominal)	55	45	23
	Net weight/unit (kg)	5.8	5.8	5.7

Identification Imprint: 7024/Gonia 180 Tip colour: blue

Gonia® 180: rev. EN 15

## Materials to be welded

Steel	Code	Type
General structural steel	EN 10025	S185, S235, S275, S355
Ship plates	ASTM A131	Grade A, B, D, AH32 to DH36
Boiler & pressure vessel steel	EN 10028-2	P235, P265, P295, P355
Fine grained steel	EN 10113-2 EN 10113-3	S275, S355, S275, S355

## Calculation data

Sizes Diam. x length (mm)	Current range (A)	Current type	Arc time - per electrode at max. current - (s)*	Energy E(kJ)	Dep.rate H(kg/h)	Weight/ 1000 pcs. (kg)	Electrodes/ kg weldmetal B	kg Electrodes/ kg weldmetal 1/N
4.0 x 450	200 - 240	AC	69	528	3.9	108.7	14	1.43
5.0 x 450	280 - 300	AC	78	897	5.4	166.7	9	1.43
6.3 x 450	320 - 420	AC	80	1243	7.0	247.83	6	1.43

\*stub end = 35 mm

## Welding parameters, optimum fill passes

Welding position Diameter (mm)	PA/1G Current (A)	PB/2F	PC/2G
4.0	210	200	200
5.0	300	280	
6.3	390	360	

## Application advice

High yield strength steels such as S355, L360, P355 and X60 preheat according EN 1011-1