

High recovery rutile electrode

Classification

AWS A5.1-91 : E7024-1
EN 499-94 : E 42 2 RA 73

General description

Rutile coated electrode with brittle slag, for fillet welds and horizontal V- and X-welds
160% recovery, high welding speed
Good X-ray soundness
Even in narrow gaps and rusty materials easy slag release
Class 3 approved

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	TÜV
3,3Y	3,3Y	3Y	3	+	3Y	3,3Y	3	3,3Y	+

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

C	Mn	Si
0.08	1.0	0.3

Mechanical properties, all weld metal

	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					-18°C	-20°C
Required: AWS A5.1-91		min. 399	min. 482	min. 22	min.27	
EN 499-94		min. 420	500-640	min. 20	min. 47	
Typical values	AW	460	520	28	47	

Packaging, available sizes and identification

	Diameter (mm)	4.0	5.0
	Length (mm)	450	450
Unit: box	Pieces / unit (nominal)	65	40
	Net weight/unit (kg)	6.3	5.7

Identification

Imprint: 7024-1/Resistens 160

Tip colour: dark blue

Resistens® 160: 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
Cast steel	EN 10213-2	G P 240R
Pipe material	EN 10208-1	L210, L240, L290, L360
	EN 10208-2	L240, L290, L360.
	API 5LX	X42, X46, X52
Boiler & pressure vessel steel	EN 10028-2	P235, P265, P295
Fine grained steel	EN 10113-2	S275, S355,
	EN 10113-3	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	140 - 235	AC	65	527	3.6	96.5	15	
5.0 x 450	210 - 330	AC	68	853	5.3	144.9	10	

*stub end 35 mm

Welding parameters, optimum fill passes

Welding position Diameters (mm)	PA/1G Current (A)	PB/2F	PC/2G
4.0	220	200	195
5.0	310	290	

Application advice

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