

# **ELETROERO**

**Soluções em Escovas Grafites e Eletrodos**

**ELETRODOS DE GRAFITE PARA FUSÃO DE FORNO A ARCO**

**Graphite Electrodes for arc electric furnace**



Eletrodos Eletroero para fusão de fornos a arco voltaico. Dispomos de todos os dimensionais para todas as aplicações. Tipos:

**RP/GP** – General Power – **HP** High Power and **UHP** – Ultra High Power.

We have all dimensional for all applications.  
Types: RP/GP - General Power - High Power  
HP and UHP - Ultra High Power.

**Tabela de Especificações para Eletrodos de Grafite para Fusão:**

Specifications for Graphite Electrodes:

Specification	Unit of Measure	3" - 10" Dia. Premium	12" - 24" Dia. Premium	12" - 18" Dia. UHP	20" - 24" Dia. UHP	28" - 30" Dia. UHP
Ash (Max.)	%	0.2	0.2	0.2	0.2	0.2
Apparent Density	g/cm <sup>3</sup>	1.58 - 1.68	1.58 - 1.68	1.60 - 1.76	1.60 - 1.72	1.68 - 1.75
Porosity	%	24 - 30	24 - 30	20 - 28	22 - 28	20 - 25
Transverse Strength	lb/in <sup>2</sup>	1700 - 2700	1150 - 2000	1400 - 2150	1300 - 2000	1000 - 1500
Young's Modulus	X106 LB/in	1.0 - 1.4	1.0 - 1.6	1.4 - 1.9	0.9 - 1.4	0.9 - 1.3
Electrical Resistance	X105 Omega in.	30 - 40	24 - 40	18 - 33	18 - 33	42 - 55
Coefficient of Thermal Expansion	X10-6 /F°	0.3 - 3.0	0.2 - 2.1	0.2 - 1.8	0.2 - 1.8	0.2 - 1.8

Electrode Size	Nipple Size	TPI	Weight	Electrode Tolerances		
				Nominal Length	Maximum Length	Minimum Length
4 x 48	2.75 x 4	4	35	48	49	38
6 x 60	13/16 x 7	4	175	60	61.02	55.12
8 x 60	13/16 x 7	4	165	72	73.82	66.93
8 x 72	13/16 x 7	4	200	96	97.44	89.57
9 x 72	5.5 x 8	3	265	110	114	95
10 x 60	6.125 x 8.66	3	290	4	4.015	3.897

10 x 72	6.125 x 8.66		
	6.125 x 8.66		
	6.975	3	450
12 x 60	x	3	450
	10.66	3	
12 x 72		3	500
14 x 72	8.5 x 12	3	700
	8.5 x 12		
16 x 72	9.5 x 14	3	900
		3	900
16 x 96	8.5 x 12	3	1200
		3	1200
	9.5 x 14		
	9.5 x 14		
18 x 72	10 5/8 x 18	3	1100
		4	1100
18 x 96	9.5 x 14	3	1425
		4	1425
	10 5/8 x 18		
20 x 96	10 5/8 x 18	4	1925
	12.5 x 18		
24 x 96	18	4	2700
24 x 110	12.5 x 18	4	3080
	14.75 x 18		
28 x 110		4	4100
	16 x 24		
30 x 110		4	4950

8	8.031	7.913
10	10.078	9.921
12	12.087	11.929
14	14.055	13.897
16	16.063	15.906
18	18.071	17.913
20	20.079	19.921
24	24.094	23.937
28	28.110	27.874
30	30.118	29.881

Specification for RP Graphite Electrode:		Unit	Nominal Diameter mm	
			≤ Φ400	≥ Φ450
Resistivity	electrode	μ Ω·m	≤ 8.0	≤ 8.2
	nipple		≤ 5.8	≤ 5.8
Bending Strength	electrode	Mpa	≥ 9.0	≥ 8.8
	nipple		≥ 18.0	≥ 18.0
Elastic Modulus	electrode	Gpa	≤ 9.5	≤ 9.5
	nipple		≤ 14.0	≤ 14.0

Bulk Density	electrode	G/cm <sup>3</sup>	≥ 1.62	≥ 1.62
	nipple		≥ 1.70	≥ 1.70
C.T.E (100~600°C)	electrode	10 <sup>-6</sup> /°C	≤ 2.2	≤ 2.2
	nipple		≤ 2.0	≤ 2.0
ASH	electrode	%	≤ 0.35	≤ 0.35
	nipple		≤ 0.35	≤ 0.35

Suggested Current Capacity and Current Density:

Diameter mm	RP		HP		UHP	
	Current Load (A)	Current Density (A/cm <sup>2</sup> )	Current Load (A)	Current Density (A/cm <sup>2</sup> )	Current Load (A)	Current Density (A/cm <sup>2</sup> )
200	5000-6900	15-21	5500-9000	18-25		
250	7000-10000	14-20	8000-13000	18-25		
300	10000-13000	14-18	13000-17400	17-24	15000-22000	20-30
350	13500-18000	14-18	17400-24000	17-24	20000-30000	20-30
400	18000-23500	14-18	21000-32000	16-24	25000-40000	19-27
450	22000-27000	13-17	25000-40000	15-24	32000-45000	19-27
500	25000-32000	13-16	30000-48000	15-24	38000-55000	18-27
550	32000-41000	13-16	37000-58000	15-23	45000-65000	18-27
600	38000-47000	13-16	44000-67000	15-23	52000-75000	18-26
650	45000-54000	13-16	54000-73000	15-23	62000-95000	18-24

Consulte-nos, sempre poderemos lhe oferecer uma boa opção.

Consult us. – Joel Morais – Diretor – CEO - CREA 5069351262

**Eletroero Industrial Ltda.**

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