

Material type
**GRANULAR
PITCH
ELECTRODES
LINING**

Utilization
**R&D
IN-PLANT
LAB**

The coefficient of thermal expansion of an electrode is an important parameter to predict its thermal shock resistance. When an electrode at ambient temperature is put in operation at a high temperature, a heat wave will penetrate the block body and create a temperature gradient. A high coefficient of thermal expansion increases the strain in the body and, thus, the thermal stresses to the extent that cracking can occur. The measurement is conducted with the RDC-158 apparatus, where a core sample with a diameter of 50 mm and a height of 50 mm is placed in a furnace, preheated at 300°C, for a given period of time. The length change at the end of the test is recorded and used for the calculation of the coefficient of thermal expansion in $10^{-6}/K$. This equipment is not suitable for the quality control of graphite electrodes, as different temperature ranges and a higher precision level would be required.

Technical information	Standard Method:	ISO 14420
	Property:	Coefficient of Thermal Expansion $[10^{-6}/K]$
	Sample:	Core Ø50 x 50 mm
	Process time:	Maximum 3 hours
	Installation:	Draft-free workbench
	Dimensions (LxWxH):	48 x 56 x 120 cm
	Weight:	65 kg
	Electrical Property:	230 V 1/N/PE, 50 Hz 0.5 kW, 2.2 A
	Fluid Property:	Air, 3–7 bar
	Certified Reference Material:	RDC 1158
	Database Connection:	Yes

Additional Recommended Equipment:

Drilling Machine (RDC-157 or RDC-179)

Saw (RDC-140 or RDC-148)

Drying oven (min. temperature 180°C)



RDC 1158

Technical information	Weight per unit:	[-]
	Number of tests:	[-]

