

Material type  
**GRANULAR  
 PITCH  
 ELECTRODES  
 LINING**

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

General description  
 During electrolysis, air can be present at the anode top. A burning reaction can occur between the air and the anode, which increases the net anode consumption and potentially deteriorates the quality of the butts for the next anode generation. If a selective attack of the binder matrix occurs, carbon particles get excavated from the anode and end up in the bath (carbon dusting). It leads to a higher bath resistivity and temperature, so the current efficiency may be decreased. It may also trigger spikes formation. It is important to produce anodes with a minimum CO<sub>2</sub> reactivity to avoid such performance problems. The measurement is done with the RDC-151 apparatus, where a core sample of Ø 50 mm and a length of 60 mm is placed in a furnace at 550 °C under air atmosphere and cooled down to 400 °C with a rate of 15 °C/h. After cooling, the sample is weighed and tumbled with steel balls using the RDC-181 apparatus to remove any loosely bound particles. The final weight of the residual body is then measured. The following three results are reported:

- Air reactivity residue: corresponds to the residual sample.
- Air reactivity dust: corresponds to the removed grains.
- Air reactivity loss: corresp. to the loss due to air burning.

RDC-151 is available with 1 or 3 furnaces, in which one sample per furnace can be placed at the same time. During the sample preparation, a hole must be drilled in the center of the sample's surface area with the RDC-180 Bench Drilling Machine.

Technical information	<b>Standard Method:</b>	ISO 12989-1
	<b>Property:</b>	
	Residue	[%]
	Loss	[%]
	Dust	[%]
	<b>Sample:</b>	Core Ø50 x 60 mm
	<b>Process Time:</b>	~ 12 hours
	<b>Installation:</b>	Floor Standing under Fume Hood
	<b>Dimensions (LxWxH):</b>	160 x 60 x 200 cm
	<b>Weight:</b>	377 kg
<b>Electrical Property:</b>	400V 3/N/PE, 50 Hz 3.3 kW, 8.3 A	
<b>Fluid Property:</b>	Air, 600 l/h, 3-7 bar	
<b>Certified Reference Standard:</b>	RDC-1151	
<b>Database Connection:</b>	Yes	

### Additional Recommended Equipment:

Drilling machine (RDC-157 or RDC-179)  
 Saw (RDC-140 or RDC-148)  
 Bench Drilling Machine (RDC-180)  
 Tumbling Apparatus (RDC-181)  
 Drying oven (min. temperature 180 °C)  
 Weighing scale with an accuracy of 0.1 g



## RDC 1151

Technical information	<b>Weight per unit:</b>	N/A
	<b>Number of tests:</b>	6

