

# RDC-191

## Name ABRASION

Material type  
**GRANULAR  
PITCH  
ELECTRODES  
LINING**

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

General description  
The lifetime of an aluminium electrolysis cell is influenced by the wear of the cathode blocks. This mechanism is complex and depends on several factors related to the physical and chemical abrasion of the blocks (such as physical wear, formation of aluminium carbide, bath movements, electrical current distribution, etc). The physical wear of the cathode already gives a good indication of the overall resistance of the material even though the chemical reactions are not considered. The measurement is conducted with the RDC-191 apparatus, where a cathode core sample with 50 mm diameter and 20 mm height is placed on an abrasive disc. Specific force and rotating speed are then applied for a given period of time. The height change of the sample before and after the test is expressed as a percentage of the initial height to calculate its abrasion.

Technical information

Property:	Abrasion	[%]
Sample:	Core Ø50 x 20 mm	
Process Time:	~ 2 minutes	
Installation:	Workbench	
Dimensions (LxWxH):	75 x 75 x 60 cm	
Weight:	100 kg	
Electrical Property:	230V 1/N/PE, 50 Hz 1.5 kW, 6.6 A	
Database Connection:	No	

**Additional Recommended Equipment:**  
Drilling machine (RDC-157 or RDC-179)  
Saw (RDC-140 or RDC-148)  
Drying oven (min. temperature 180 °C)

