Air Permeability

RDC-145

R&D Carbon

Electrodes | Lining | Lab

General Description

The air permeability, corresponding to the open pores larger than 50 µm, strongly influences the burning reaction that can occur due to the presence of both air and CO_2 gases. For minimum excess carbon consumption in the electrolysis cells, low permeability is important, which reduces the anode surface area in direct contact with air or CO_2. The air permeability is also a good indicator of some process parameters, such as the mixing conditions, the variations of recycled anode butts or the binder pitch used during the electrode production process. The measurement is conducted with the RDC-145 apparatus, where the time required by a certain volume of air to pass through a sample with a 50 mm diameter and a height of 20 mm is measured. The method is based on a comparative measurement: the actual time is compared to the time required from a reference material with a known permeability. The calculated permeability is expressed in nanoperm (nPm).

Technical Information

Standard Method	ISO 15906
Property	Air Permeability [nPm]
Sample	Core Ø 50 x 20 mm
Process Time	1-5 minutes
Installation	Workbench
Dimensions (LxWxH)	60 x 62 x 69 cm
Weight	53 kg
Electrical Property	230 V 1/N/PE, 50 Hz 0.5 kW, 2.2 A
Certified Reference Material	RDC 1145
Database Connection	Yes

Additional Recommended Equipment

Drilling machine (RDC–157 or RDC–179)
Saw (RDC–140 or RDC–149)
Drying oven (min. temperature 180°C)

Certified Reference Material

RDC 1145	
Weight per unit	N/A
Number of tests	N/A

Video

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