RDC-195 Paste Shrinkage

The bottom of the aluminum electrolysis cell consists of the carbon lining with current collector bars, refractory and insulation, which are placed in a steel shell. The carbon lining has two purposes. It acts as the refractory container for the molten metal and electrolyte and conducts electricity to provide an even current distribution over the container bottom surface. In order to prevent catastrophic deterioration of the carbon lining, certain material properties are to be specified. The ramming paste properties play a very important role during the start-up of the cell. Important properties for ramming paste are compactability, shrinkage upon baking and quality of carbon filler and binder.

The most important property is the shrinkage from the temperature when the paste solidifies (200-500 Deg C, depending on binder carbonization chemistry) to the top temperature (950 Deg C). The RDC-195 is normally used for the automatic determination of the shrinkage of paste (20 - 950º C) where the length change of the sample is continuously recorded on a graph. It includes a laptop computer and data acquisition software (Windows NT).

The heat-up rate may be changed on the temperature controller to the desired rate.

Electrical Connection	230V 1/N/PE, 50/60Hz
Power	2.20 kW
Weight	200 kg
Dimensions	80 x 60 x 169 cm (LxWxH)
Measurement	Paste Shrinkage [%]
Standard compatible	ISO 14428
Standard RDC	RDC-1195
Configuration	Floor-standing
Gas supply	Argon 200 l/h, max 2 bar
Max continuous operating temperature	950 °C
Max temperature	990 °C
Number of samples /test	1
Process time	~ 12 hours (Heating up and Cooling down)

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