

Material type

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Utilization

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General description

The bottom of aluminium electrolysis cells is lined with cathode blocks that are sealed with a ramming paste to avoid any leakage. When lining a cell, the green paste is directly rammed between the cathode blocks and baked in situ during the start-up of the pot with the process heat. The quality of the paste is of primary importance as to ensure long operation without disturbances. As the baking of the paste is performed during its usage, it is important to know the dimensional changes of the paste from its solidification up to when the final temperature is reached.

The measurement is conducted with the RDC-195 apparatus, where a green paste sample with 50 mm diameter and 50 mm height (prepared with the RDC-183 or RDC-194 equipment) is placed in a furnace at room temperature under an inert atmosphere. The temperature is increased up to 950 °C while the length change of the paste sample is recorded. The expansion of the paste between the point where it became non-plastic, which depends on the binder type, to the point at the maximum temperature, is used for the calculation of the paste shrinkage and expressed as a percentage of the initial sample length. In addition, the length change during a holding period at the maximum temperature can also be recorded.

Technical information

Standard Method:	ISO 14428
Property:	
Paste Shrinkage	[%]
Sample:	Rammed core Ø50 x 50 mm
Process Time:	~ 24 hours
Installation:	Floor standing under fume hood
Dimensions (LxWxH):	80 x 60 x 190 cm
Weight:	200 kg
Electrical Property:	230V 1/N/PE, 50 Hz 2.2 kW, 10 A
Fluid Property:	Argon, 100 l/h, 10 bar Air, 3 7 bar
Certified Reference Standard:	RDC 1195
Database Connection:	No

Additional Recommended Equipment:
Ramming device (RDC 183 or RDC-194)

Technical information

Weight per unit:	N/A
Number of tests:	N/A

