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The Impact of Production Process on Anode Quality

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Abstract: The quality of anode manufacturing processes is one of the most important economical factors that leads to saving energy and reduce carbon consumption in electrolysis cells during aluminum production. This paper presents correlations between anode block manufacturing process and anode block qualities, and their impact on the net carbon consumption in electrolytic cells. This study deal with the effect of raw materials and manufacturing parameters in prebake anodes, Green anodes behavior, design correction of anode structure during backing process and finally measuring some important factors like: electricity Resistance, thermal conductivity ,flexural strength andthat directly impact on quality of anode block.

Keywords: Prebake anode, Calcined petroleum coke, Coal tar pitch, Carbon consumption, CO_2 reactivity, Air reactivity