

# Considerations for Selecting an Open Top Anode Baking Furnace Relining Strategy

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## Abstract

Anode baking furnaces are designed to operate for many years. Whether due to end of life wear or anode dimension changes, furnace relining causes a major disruption to the production of carbon anodes in an aluminum smelter. There are several options available when it comes to determining when and how to approach this critical event. Anode production can be stopped over a prolonged period of time to allow for a complete open top furnace reline, a furnace can be relined one tub at a time to allow for production to be partially maintained, or one fire can be extinguished in order to reline a few furnace sections while maintaining anode production.

This paper covers the different elements that should be taken into consideration before selecting a specific rebuild method. Project drivers, planning, logistics, refractory design and capital costs are just a few of the issues that must be evaluated. Although the decision may not be obvious at first, a comprehensive engineering and construction analysis can ensure that the best business strategy is retained

**Keywords:** Open top anode baking furnace; furnace reline; anode production; refractory design and installation; firing cycle.