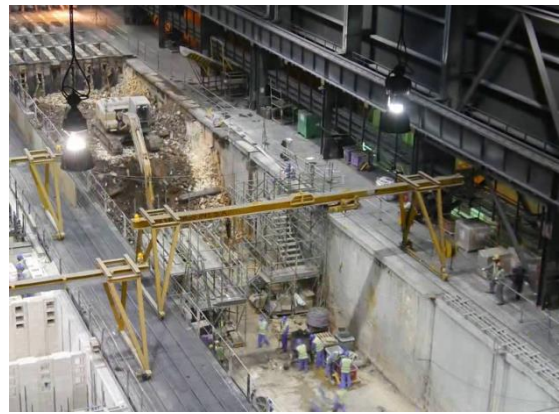

ANODE BAKING TECHNOLOGY



**OPEN TOP BAKING FURNACES FOR
HIGH QUALITY ANODES**



RIEDHAMMER
CARBON BAKING TECHNOLOGY

COMPANY PROFILE

In 1924 Ludwig Riedhammer decided to start his own company for the development and construction of industrial furnaces for manufactured carbon. Very soon the furnaces were accepted throughout the world and paved the way for the company's success.



First Riedhammer Baking Furnace

Nowadays Riedhammer GmbH, located in Nuremberg, Germany, is the leading manufacturer of industrial kiln plants worldwide and offers innovative technologies for Advanced Materials, besides its traditional business areas like ceramics and sanitary ware.

For the Carbon Industry, Riedhammer is presently the only independent supplier worldwide being able to deliver complete solutions with its proven furnace technologies for baking anodes, cathodes and electrodes, supplemented with specifically tailored solutions for the production of special carbon products.



Open Top Anode Baking Furnace

95 years of experience and know-how guarantee a high economic efficiency and reliability of the plants.

Riedhammer provides various solutions from revamping up to new turn-key plants based on the most advanced technology and proven reliability, combining tradition and experience with state-of-the-art development, engineering, construction and commissioning to a new generation of furnaces including all required auxiliary equipment.



Riedhammer main office in Nuremberg

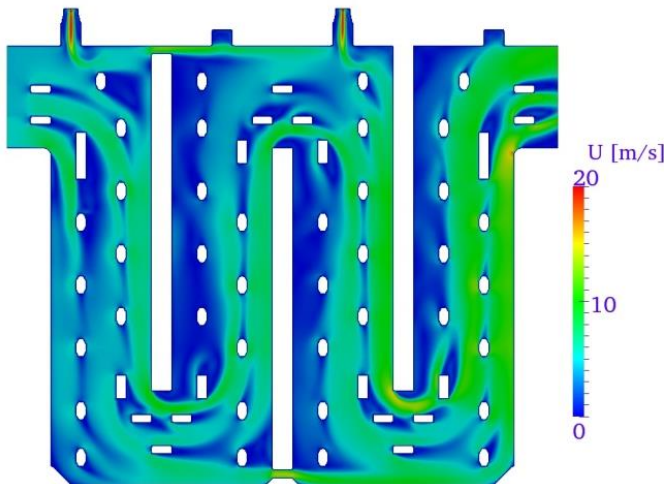
A worldwide network of representatives guarantees a highly efficient customer service and professional support whenever and wherever required.

The engineers and technicians of the Riedhammer team are trained to optimize project progress for the customers' benefit by reducing project run-times, thus minimizing costs and maximizing return on investment.

ENGINEERING & SERVICES

Our team of specialists provides customers with the most suitable technical and economical solutions for their specific requirements such as:

- Customized solutions for the industry worldwide
- Conceptual analysis and feasibility studies
- Retrofit and modernization of existing plants
- Design and engineering of baking furnaces and baking facilities
- Supply of complete baking facilities including equipment
- CFD Modelling



CFD Modelling

PROJECT EXECUTION

From the supply of engineering packages up to the execution of "turnkey" projects worldwide:

- Design & engineering
- Procurement & supply
- Quality control (QA/QC)
- Project administration
- HSE management
- Construction services and job site management
- Start-up & commissioning

TECHNICAL SERVICE & SUPPORT

Our after-sales service network provides support for existing equipment and processes, and keeps customers informed about recent developments and improvements.

- After-sales and customer support
- Optimization of baking processes
- Plant audits
- Furnace inspections
- Maintenance strategies
- Operation & maintenance training

ADVANTAGES

Our advanced furnace design offers the following advantages:

- Proven refractory design
- Extended brickwork lifetime
- Low specific fuel consumption
- Flexible design
- RH life cycle maintenance concept
- Safe production
- High operating performance
- Low operating costs

OPEN TOP ABF CHARACTERISTICS

Riedhammer Open Top anode baking furnaces are designed for high performance and benchmark productivity figures.

<i>Number of fire groups</i>	2 - 5	<i>nos</i>
<i>Sections per fire</i>	16 - 18	<i>nos</i>
<i>Pits per section</i>	5 - 10	<i>nos</i>
<i>Productivity</i>	> 1.100	<i>kg/h/pit</i>
<i>Productivity per fire group</i>	> 85.000	<i>tba</i>
<i>Fuel consumption</i>	1,8 - 2,3	<i>GJ/tba</i>
<i>Packing material consumption</i>	8 - 10	<i>kg/tba</i>
<i>Refractory material consumption</i>	5 - 6	<i>kg/tba</i>
<i>Fluewall lifetime</i>	> 180	<i>cycles</i>

REFERENCES OPEN TOP ABF

During the last 15 years, the Open Top furnace technology has been re-implemented within Riedhammer and became one of the most successful products on the market. Our reference list includes well-known Aluminium producers from all over the world.

Project	Location	Year	Type	Sections	Pits
<i>Aluminij MOSTAR</i>	<i>Mostar, BIH</i>	<i>2005</i>	<i>Revamping</i>	<i>36</i>	<i>5</i>
<i>ALMAHDI Hormozal ABF#2</i>	<i>Bandar Abbas, Iran</i>	<i>2006</i>	<i>New Construction</i>	<i>34</i>	<i>7</i>
<i>Dubai ABF#1</i>	<i>Dubai, U.A.E.</i>	<i>2006</i>	<i>Revamping</i>	<i>32</i>	<i>8</i>
<i>EMAL Phase 1</i>	<i>Al Taweelah, U.A.E.</i>	<i>2007</i>	<i>New Construction</i>	<i>2 x 64</i>	<i>8</i>
<i>TRIMET</i>	<i>Hamburg, Germany</i>	<i>2008</i>	<i>ABF Conversion</i>	<i>48</i>	<i>6</i>
<i>KAS</i>	<i>Pavlodar, Kazakhstan</i>	<i>2009</i>	<i>New Construction</i>	<i>50</i>	<i>7</i>
<i>DUBAL ABF#2</i>	<i>Dubai, U.A.E.</i>	<i>2011</i>	<i>Revamping</i>	<i>32</i>	<i>8</i>
<i>HINDALCO ABF#6</i>	<i>Renukoot, India</i>	<i>2011</i>	<i>New Construction</i>	<i>34</i>	<i>9</i>
<i>DUBAL ABF#4</i>	<i>Dubai, U.A.E.</i>	<i>2013</i>	<i>Revamping</i>	<i>48</i>	<i>8</i>
<i>RUSAL TAZ</i>	<i>Taishet, Russia</i>	<i>2013</i>	<i>New Construction</i>	<i>2 x 64</i>	<i>8</i>
<i>DUBAL ABF#3</i>	<i>Dubai, U.A.E.</i>	<i>2014</i>	<i>Revamping</i>	<i>32</i>	<i>8</i>
<i>TRIMET</i>	<i>St.-Jean-de-Maurienne, France</i>	<i>2014</i>	<i>Cross-over Revamping</i>	<i>n/a</i>	<i>n/a</i>
<i>DUBAL ABF#1</i>	<i>Dubai, U.A.E.</i>	<i>2015</i>	<i>Revamping</i>	<i>32</i>	<i>8</i>
<i>DUBAL ABF#2</i>	<i>Dubai, U.A.E.</i>	<i>2015</i>	<i>Height Increase</i>	<i>32</i>	<i>8</i>
<i>EMAL Phase 1 Upgrade</i>	<i>Al Taweelah, U.A.E.</i>	<i>2015</i>	<i>Height Increase</i>	<i>2 x 64</i>	<i>8</i>
<i>ALBA ABF#3 Rebuild</i>	<i>Askar, Bahrain</i>	<i>2015</i>	<i>Revamping</i>	<i>68</i>	<i>7</i>
<i>SUAL (Rusal) VgAZ</i>	<i>Volgograd, Russia</i>	<i>2016</i>	<i>New Construction</i>	<i>52</i>	<i>5</i>
<i>RUSAL TAZ#1 Modification</i>	<i>Taishet, Russia</i>	<i>2016</i>	<i>Height Increase</i>	<i>64</i>	<i>8</i>
<i>ALBA Line 6 - ABF#5</i>	<i>Askar, Bahrain</i>	<i>2016</i>	<i>New Construction</i>	<i>68</i>	<i>8</i>
<i>HINDALCO ABF#5</i>	<i>Renukoot, India</i>	<i>2017</i>	<i>Revamping</i>	<i>32</i>	<i>7</i>
<i>RUSAL TAZ#2 Modification</i>	<i>Taishet, Russia</i>	<i>2018</i>	<i>Height increase</i>	<i>64</i>	<i>8</i>
<i>RUSAL SAZ ABF#3</i>	<i>Sayanogorsk, Russia</i>	<i>2019</i>	<i>Revamping</i>	<i>80</i>	<i>7</i>
<i>EGA (DUBAL) ABF#2</i>	<i>Dubai, U.A.E.</i>	<i>2019</i>	<i>Revamping</i>	<i>32</i>	<i>8</i>
<i>EGA (EMAL) ABF#1</i>	<i>Al Taweelah, U.A.E.</i>	<i>2019</i>	<i>Revamping</i>	<i>64</i>	<i>8</i>

CONTACT

RIEDHAMMER GmbH

Industrial Kiln Plants
Carbon Division
Klingenhofstrasse 72
90411 Nuremberg
Germany

Telephone: +49 911 5218 0
Telefax: +49 911 5218 231
Email: carbon@riedhammer.de

