

CONSTRUCTION SERVICE



HORN
Bau & Service GmbH

innovation
ENGINEERED IN GERMANY

FURNACE SERVICE WORKS

HORN® Bau & Service GmbH is the executive construction service on the construction site. The unique working conditions, such as the extreme temperatures, call for a team of highly qualified specialists and experts – such as those of HORN® Bau & Service GmbH.



COLD REPAIRS

Before new furnace installations or cold repairs, HORN® Bau & Service GmbH provides the material and the expertise to drain the furnace and, if necessary, to execute the controlled cooling down. Controlled cooling is essential if parts of the furnace, such as the melting end crown, etc. are to be preserved.

High precision bricklaying then guarantees the customer a furnace with a long lifespan and many years of trouble-free operation. In addition to traditional refractory construction, HORN® Bau & Service GmbH supervises steel construction on an international scale.

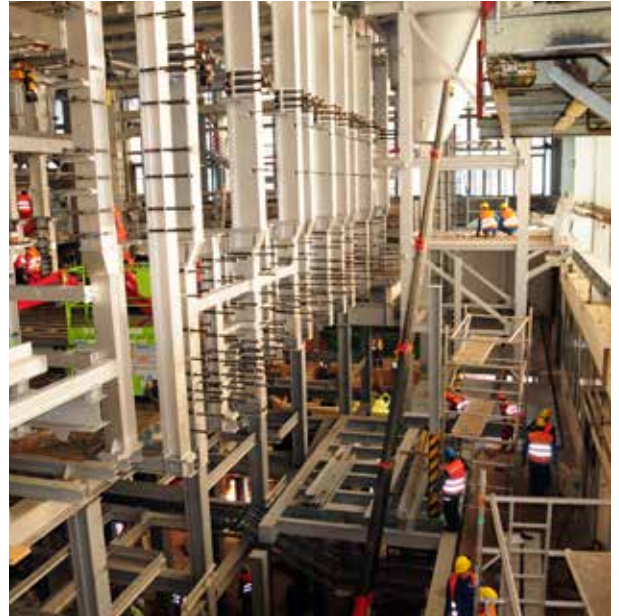
With its own experts HORN® supervises its own staff or customers' manpower to support all installations or repair works.

Finally, the HORN® service company heats up the furnace to operation temperature with special heat-up burners and measurement equipment to ensure the proper temperature gradient and controlled expansion of all refractory material.



HORN® TURN-KEY SERVICE "FROM GLASS TO GLASS"

- **Site supervision**
- **Draining, dismantling, disposal**
- **Steel installation**
- **Refractory assembly**
- **Furnace heat up and dust free cullet charging**
- **Hot insulation**
- **Commissioning**



HOT REPAIRS

HORN® Bau & Service GmbH provides a full-service package during furnace operation to maintain the furnace and to secure a long furnace lifespan, e.g. by thermal regenerator cleaning and flux line paving.

Regenerator cleaning is one of the methods to improve the efficiency of the regenerator by removal of condensation from the checker system.

For thermal regenerator cleaning external burner systems are being installed in the regenerator below the rider arches. The temperature of the regenerator

checker downpart increases to such a degree that the condensates are melting and flowing down the shafts to the regenerator basement. Here the debris can be taken out and disposed. The checkers are clean again and the furnace combustion process and operation can continue more efficiently.

Since the control and operation of the thermal cleaning call for a great deal of experience as well as state-of-the-art technical equipment, customers are well advised to consult specialists such as the HORN® staff.

Further special tools are available to execute hot refractory repair works during furnace operation. To replace damaged refractory material with new material, special chainsaws with diamond coated saw chains are available for clean cuts in refractory material without vibration and without influencing adjacent material. The diamond chainsaws are hydraulically driven and water-cooled. With this chainsaw, openings up to 580 mm deep can also be sawn into high-strength materials. The ambient temperature during operation may be up to 200 °C while the temperature on the inner side of the wall may be up to 1600 °C.

The diamond chainsaws are used for repairing rat holes, removal of washouts in regenerator walls, openings for cleaning, inspection, and placement of dampers or connections.



HORN® HOT WORK SERVICE

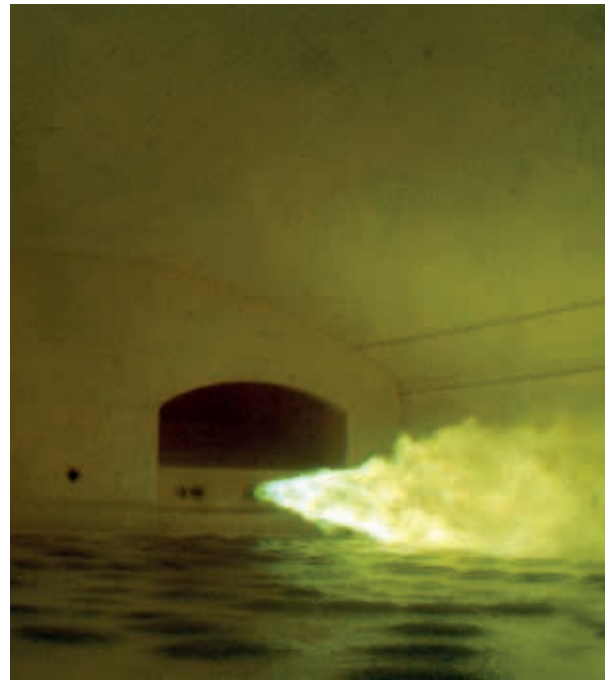
- **Furnace hot repair works**
- **Thermal regenerator cleaning**
- **Installation and exchange of electrode holders during production**
- **Overcoating of the flux line as well as the throat of the furnace**
- **Manufacturing and installation of specially shaped refractory block**
- **Fast and clean placing of openings in brickwork walls by means of diamond coated chainsaw tools**
- **Drillings for draining, bubbling, electrodes, thermocouples, etc.**



INSPECTION

With the HORN® inspection service the glass plant team can easily observe the inside of the furnace by endoscope and exactly determine necessary repair works or remaining lifespan. Nearly all corners and parts of the tank superstructure, port neck and regenerators can be inspected by using water-cooled optical lenses and digital camera systems. Finally, all pictures and videos are then optimised and a report is supplied with recommendations regarding repair requirements or remaining lifespan. Outer visual inspections, supported by our thermal camera, can also be provided by HORN®.

- **Furnace inspection with endoscope**
- **Evaluation of eventually necessary repairs to extend the furnace lifespan**



B & S IS CERTIFIED ACCORDING TO



"AMS BAU" is a health and safety management system from the institution for statutory accident insurance of the German building industry.



DIN EN ISO 9001:2008

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The key to HORN®'s extensive expertise in all fields of glass melting technology is the profound understanding of each detail within the entire process, making HORN® the specialist for technological progress and innovation for each aspect of a glass plant. In addition to its knowhow about individual elements such as furnaces, HORN® has expanded its services to become a one-stop supplier for turn-key plants. From initial planning to full operation - HORN® stands by you all the way.



PLANNING +
ENGINEERING



MANUFACTURING



SERVICE /
INSTALLATION +
SUPPORT



LET'S GO
FULL CIRCLE.

HORN
Bau & Service GmbH

HORN® BAU & SERVICE GMBH
A MEMBER OF HORN® GLASS INDUSTRIES AG
BERGSTRASSE 2
D-95703 PLÖSSBERG/GERMANY

TEL.: +49 9636 / 9204-0
FAX: +49 9636 / 9204-10

WWW.HORNGLOSS.COM

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