

# GLASS PRODUCTION TECHNOLOGY

LET'S GO FULL CIRCLE.

**HORN**  
GLASS INDUSTRIES

*innovation*  
ENGINEERED IN GERMANY



**HORN**

1

# WHO WE ARE



## WHO WE ARE

### HORN® GLASS INDUSTRIES AG

HORN® is a medium-sized company with many years of experience in planning, engineering and building glass melting furnaces as well as turn-key glass plants.

As a passionate specialist and reliable partner for the global glass industry, the company provides its customers with tailor-made solutions, when it comes to the design and supply of glass melting technology all over the world.

HORN® Glass Industries AG is a glass melting technology specialist who supplies the float, container and special glass industry with high quality: individual products right up to turn-key plants. The high-performance glass melting furnaces and turn-key plants are planned, built and delivered to glass manufacturers all over the world and are used in the production of beverage bottles, food containers, drinking glasses, window panes, automotive glass, glass tubes, glass fibres or special glass.

With more than 135 years of expertise in the construction of glass melting furnaces HORN® is well known as specialist and expert in the glass industry. Over the years, HORN® has extended its capabilities and expertise and has grown from being a glass melting furnace manufacturer into one of the leaders of the industry in technological plants.

The group has also grown considerably, adding subsidiary companies in China, Malaysia, India, Croatia, Ukraine, Brazil and the Czech Republic, adding value such as proximity and short response time for global customers. Almost 90 % of the products are exported from the HORN® headquarters in Plössberg (located in the Bavarian Upper Palatinate, Germany) to more than 75 countries worldwide.

At all times, HORN® offers its customers full support and a helping hand. Due to a very high level of vertical integration of all products, HORN® offers tailor-made solutions and, at the same time, has ventured into new areas, e.g. in the construction of proprietary tin baths and related equipment. HORN® manufactures a wide range of products in its own workshops in Plössberg such as:

- Gas, oxyfuel and heavy oil heating for melting furnaces
- Electric boosting systems
- Batch chargers
- Burners
- Stirrers
- Tin baths and tin bath equipment
- Tweels
- Dross boxes
- Waste gas reversing units
- Control cabinets and SCADA systems

HORN® is the service provider for the realisation of customer visions and projects in the field of glass and supports its customers from the first draught through the implementation process to permanent production support on-site.

With its own service division - HORN® Bau & Service GmbH - the company is able to offer a team of highly qualified specialists as well as a full-service package.

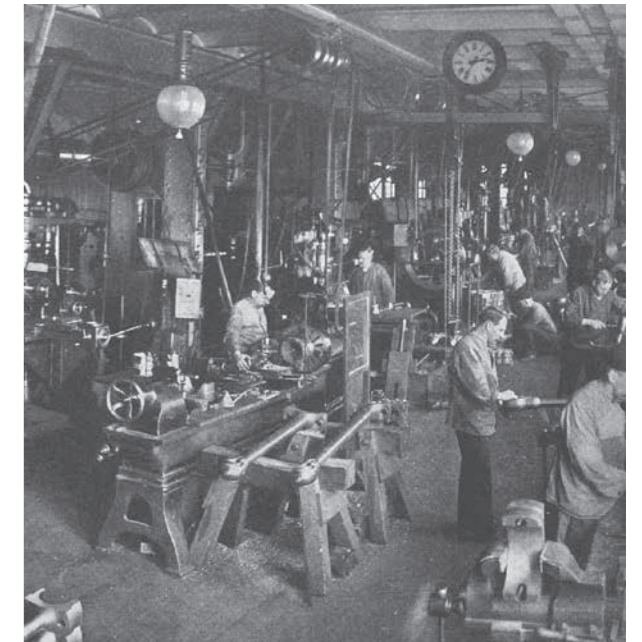
## HISTORY

- **1884:** The company August HORN® was founded
- **1999:** Takeover by Certina AG
- **2012:** Acquisition of HORN® Glass CZ s.r.o., HORN® India Pvt. Ltd. and HORN® Asia Pacific SDN. BHD. (Malaysia). Foundation of HORN® Glass Technology (Beijing) Co., Ltd.
- **2014:** Foundation of EUROX® Sauerstoff Mess-Systeme GmbH
- **2017:** Foundation of HORN® Glass Ukraine LLC.
- **2018:** Foundation of HORN® cite a.s., Czech Republic. Now: HORN® Moravia a.s., Czech Republic.
- **2020:** Foundation of HORN® Glass Brazil Ltda.
- **2021:** Takeover of JSJ Jodeit

### MORE THAN 135 YEARS OF GLASS MELTING TECHNOLOGY

From the glass furnace construction company serving the glass industry since 1884, HORN® has, over generations, developed into the leading international glass plant design and construction company it is today.

The former family owned company belongs to the Certina AG Group since 1999, a holding company for small and medium-sized niche companies.



HORN® was restructured and renamed HORN® Glass Industries AG.

In 2003 HORN® was certified according to the quality certificate DIN EN ISO 9001. The consistency of the HORN® Group's fast and flexible reaction as well as the high standard of the project documentation was positively audited.



## INNOVATION MADE IN GERMANY

### INNOVATION ENGINEERED IN GERMANY

HORN® is fascinated by technology and driven by innovative thinking. That's why the company constantly tries to improve technical details along the whole process line.

*innovation*  
ENGINEERED IN GERMANY



## FACTS

- Turnover: between 60 and 130 million euros
- About 390 employees worldwide
- 650 customers in 75 countries
- Approx. 15 - 20 major furnace projects per year
- Approx. 35,000 t/d of glass produced by HORN®
- > 60 melting boostings in operation
- > 1,000 HORN® burners in operation
- 150 HORN® furnaces in operation worldwide
- 11 turn-key plants in operation
- > 150 automations in operation

## OUR MISSION & VISION

HORN® is a leading international supplier of high quality glass melting solutions and services.

As a **competent and flexible** partner, HORN® constantly strives to deliver **the best product** in terms of price and quality in order to allow its **customers to benefit** from an improved glass production process.

HORN®'s aim is profitable growth in the market by offering customers professional solutions through a wide range of products, excellent support and service, combined with high flexibility.



**TURN  
KEY**

**LET'S GO FULL CIRCLE.**

PLANNING + ENGINEERING

MANUFACTURING

SERVICE / INSTALLATION + SUPPORT



# 2 WHERE WE ARE



## PLANT LOCATION



## IN THE HEART OF EUROPE

AT HOME IN THE WORLD.

The headquarters of HORN® Glass Industries AG are located in the heart of Europe in Plössberg in South Eastern Germany.

### VISITORS REACH IT EASILY FROM SEVERAL AIRPORTS:

- ✈ Frankfurt a. M. (DE) - 270 km
- ✈ Munich (DE) - 210 km
- ✈ Nuremberg (DE) - 130 km
- ✈ Prague (CZ) - 180 km

### AREA

- ✈ Factory premises - 39,555 m<sup>2</sup>
- ✈ Office space - 5,100 m<sup>2</sup>
- ✈ Workshop area - 7,500 m<sup>2</sup> (incl. storage area)



### THE SUBSIDIARY COMPANIES

**HORN**  
Bau & Service GmbH  
HORN® Bau & Service GmbH

**HORN**  
GLASS CZ s.r.o.  
HORN® Glass CZ s.r.o.  
(Czech Republic)

**HORN**  
GLASS SLAVONIJA D.O.O.  
HORN® Glass Slavonija d.o.o.  
(Croatia)

**HORN**  
GLASS UKRAINE LLC  
HORN® Glass Ukraine LLC.

**HORN**  
INDIA PVT. LTD.  
HORN® Glass India Pvt. Ltd.

**HORN**  
GLASS ASIA PACIFIC SDN. BHD.  
HORN® Glass Asia Pacific SDN. BHD.  
(Malaysia)

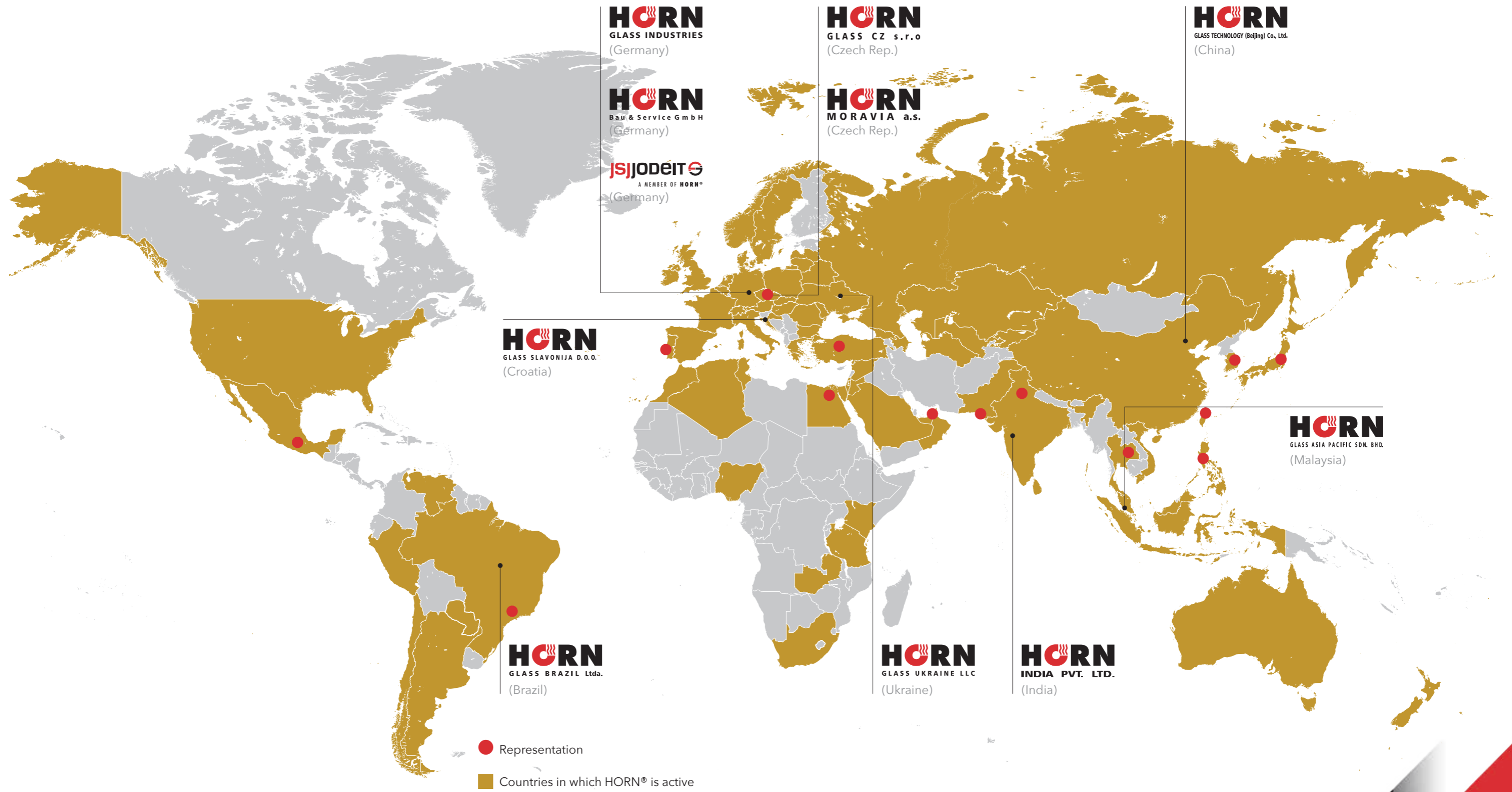
**HORN**  
GLASS TECHNOLOGY (Beijing) Co., Ltd.  
HORN® Glass Technology (Beijing) Co., Ltd. (China)

**HORN**  
MORAVIA a.s.  
HORN® Moravia a.s.  
(Czech Republic)

**HORN**  
GLASS BRAZIL Ltda.  
HORN® Glass Brazil Ltda.

**JSJ JODEIT**  
A MEMBER OF HORN®  
JSJ Jodeit GmbH

# THE WORLD OF HORN®



## REFERENCES ON TURN-KEY PLANTS

### FLOAT GLASS PLANTS

- 🏭 Azerfloat, Azerbaijan
- 🏭 Azmeel, Saudi Arabia
- 🏭 Caspian Flat Glass, Russia
- 🏭 Gomelglass, Belarus
- 🏭 Interglass, Kyrgyzstan
- 🏭 Pilkington, Germany
- 🏭 Salavatsteklo, Russia
- 🏭 TEPE Türkmen Insaat ve Ticaret A.S., Turkmenistan
- 🏭 Zarafshon Oyna, Uzbekistan

### CONTAINER GLASS PLANTS

- 🏭 TEPE Türkmen Insaat ve Ticaret A.S., Turkmenistan
- 🏭 Sirdaryo Universal Oyna, Uzbekistan

- 🏭 Piramal Glass, India
- 🏭 Pochet du Courval, France
- 🏭 Qixia Changyu Glass CO., Ltd., China
- 🏭 RAK Ghani, UAE
- 🏭 RASCO, Russia
- 🏭 Rus Glass, Russia
- 🏭 San Miguel, Vietnam, Philippines
- 🏭 Santos Barosa, Portugal
- 🏭 Shandong Jinyao, China
- 🏭 Siam Glass, Thailand
- 🏭 Sichuan Malaya Glass, China
- 🏭 Sirdaryo Universal Oyna, Uzbekistan
- 🏭 Sisecam, Turkey
- 🏭 Sotuver, Tunisia

- 🏭 Stölzle Group
- 🏭 Ta Hsiang Container Co., Taiwan
- 🏭 TEPE Türkmen Insaat ve Ticaret A.S., Turkmenistan (Turn-key technological plants)
- 🏭 Tongchang Group, China
- 🏭 Verallia Group
- 🏭 Vetrobalsamo, Italy
- 🏭 Vetropack Group
- 🏭 Vidrala, Spain
- 🏭 Vidroporto, Brazil
- 🏭 Wadi Glass, Egypt
- 🏭 Wellgrow, Thailand
- 🏭 Wiegand-Glas, Germany
- 🏭 Wolnogorskoje Steklo, Ukraine

## REFERENCES ON CONTAINER GLASS FURNACES

### CONTAINER GLASS

- 🏭 AGI glaspac, India
- 🏭 AmBev, Brazil
- 🏭 Ardagh Group
- 🏭 Asia Brewery Inc., Philippines
- 🏭 BelStekloProm, Belarus
- 🏭 Campalia, Uzbekistan
- 🏭 Cristalerias Toro SpA, Chile
- 🏭 Crown Silices de Veracruz S.A., Mexico
- 🏭 Dmitrov Steklo, Russia
- 🏭 Encirc, United Kingdom
- 🏭 Foshan Yuebo, China
- 🏭 Frigo Glass, Nigeria
- 🏭 Gerresheimer Group
- 🏭 Gürok Turizm VE. MAD. A.S., Turkey
- 🏭 HEINZ-GLAS, Germany
- 🏭 Hindustan National Glass, India
- 🏭 Huaxing Glass, China
- 🏭 JG Containers, Malaysia
- 🏭 Jiangsu Tianbo, China
- 🏭 Kavminsteklo, Russia
- 🏭 KC Glass & Material, Korea
- 🏭 Malinovskij, Ukraine
- 🏭 Milly Glass Works, Kenya
- 🏭 Noelle + von Campe, Germany
- 🏭 O-I Glass Inc., North America
- 🏭 Orora Glass, Australia
- 🏭 PGP Glassworks, Ukraine
- 🏭 Piramal Glass Ceylon, Sri Lanka

## REFERENCES ON SPECIAL GLASS FURNACES

### TABLE WARE / COSMETIC

- 🏭 BBC Glass, Indonesia
- 🏭 HEINZ-GLAS, China
- 🏭 Ishizuka Maspion, Indonesia
- 🏭 LAV, Turkey
- 🏭 Lucky Glass, Thailand
- 🏭 Mahmood Saeed Glass, Saudi Arabia
- 🏭 Nachtmann
- 🏭 R.A.K. Glass, UAE
- 🏭 Ritzenhoff
- 🏭 Sisecam, Turkey

### FIGURED / SOLAR GLASS

- 🏭 Lamberts, Germany
- 🏭 Marvol, Ukraine

### BOROSILICATE GLASS & TUBING

- 🏭 LightTech, Hungary
- 🏭 Philips
- 🏭 Schott
- 🏭 Tungsram Operations Kft., Hungary

### FIBRE GLASS / SPECIAL GLASS

- 🏭 UNION LESNÍ BRÁNA - Rotaflex, a.s. (Czech Republic)
- 🏭 GLASSEIDEN GmbH OSCHATZ (Germany)
- 🏭 Fiber Glass Oasis Company, Saudi Arabia
- 🏭 Glaswolle Wiesbaden, Germany
- 🏭 S.D.R. BIOTEC GmbH, (Germany)
- 🏭 VALMIERA GLASS (Latvia)
- 🏭 PQ Corporation, Europe
- 🏭 ISOVER, Germany
- 🏭 ISOVER, Romania
- 🏭 Eglass, Germany



3

# HOW WE DO IT



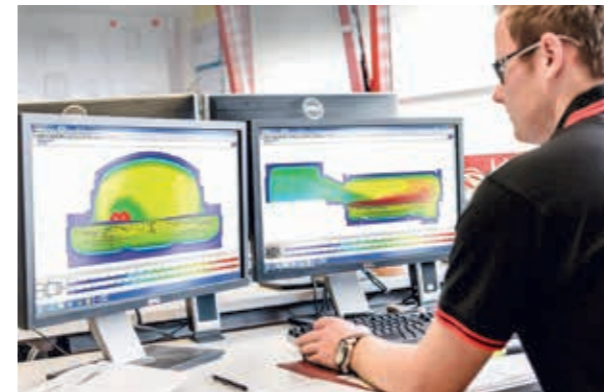
## CAPABILITIES

---

### PLANNING + ENGINEERING

---

HORN® gathered its knowledge from decades of work in the glass melting technology business. No matter if the customer needs a tiny, innovative technical detail or plans to build an entire glass plant - the project management and planning department is there from the start. HORN® takes the customer by the hand and guides him through the whole process if he wants to.



### MANUFACTURING

---

HORN® has an own manufacturing department at the company's main location in Plössberg/Bavaria, from which 90 % of the products are shipped to customers worldwide. That guarantees a quick and professional production process before the parts are used on-site.



### SERVICE / INSTALLATION + SUPPORT

---

The unique working conditions at the construction site, such as extreme temperatures, call for a team of highly qualified specialists. The HORN® experts ensure the correct installation and commissioning of all plant components and lay the foundation for a successful production. They are also available for supervision or whenever repairs or inspections are necessary.

Even when a project is finished, HORN®'s service members are there if the customer needs further advice. HORN® is happy to share its expertise by providing technical assistance as well as theoretical and practical trainings.

From start to finish HORN® is a reliable partner in planning, logistics and even legal services.



# CAPABILITIES

---

Planning + Engineering

Manufacturing

Service / Installation + Support



# 4 WHAT WE DO



## FURNACES + CONDITIONING

### MELTING FURNACES

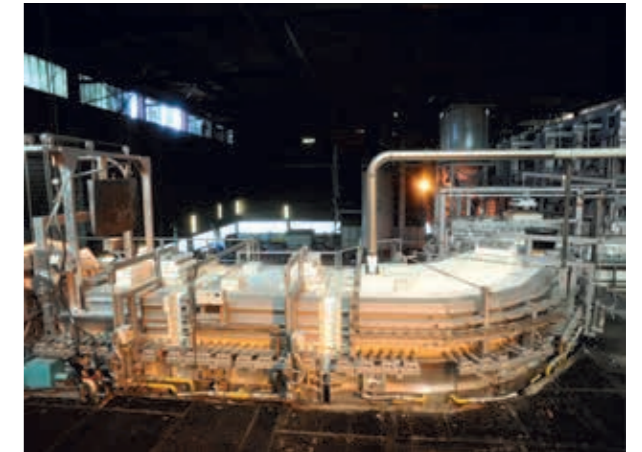
HORN® builds a wide variety of glass furnace types for its customers, ranging from the usual end fired furnace to the all electric melting furnace. Furnace selection depends on individual customer requirements and demands.



- End Fired Furnaces
- Cross Fired Furnaces
- Recuperative Furnaces
- Oxyfuel Furnaces
- All Electric Furnaces
- Float Glass Furnaces

### DISTRIBUTOR / FOREHEARTH

Distributors and forehearths are glass conditioning systems, which are vital components of a glass melting plant. They are cooling, homogenising and forwarding the molten glass to the production machines.



- Glass Conditioning Systems (GCS®)
  - Distributor GCS® 100
  - Forehearth GCS® 200
  - Forehearth GCS® 301-advanced
- Electrical forehearths
- Colouring forehearths

# FURNACES + CONDITIONING

Melting furnaces for  
container-, special- and float glass

Distributor / Forehearths



## TURN-KEY

---

### PROJECT MANAGEMENT

---



The HORN® project management team takes care of all matters and leads the customer from the first conversation until the first glass flow. Even after commissioning, HORN® ensures a trouble-free furnace operation through technical advice and training of the operations staff.

- Feasibility Study
- Basic Engineering
- Detailed Engineering
- Site Management
- Operational Support
- Training

### GLASS PLANTS

---



HORN® Glass Industries AG is the industry leader in turn-key plants. HORN® supports customers from the first rough draught, over realisation up to and including the permanent support of production, even after the glass plant is finished.

The following turn-key glass plants are realised by HORN®:

- Float Glass Plants
- Container Glass Plants
- Cast Glass Plants
- Sodium Silicate Glass Plants

### ARCHITECTURAL SERVICES

---



The construction of an entire glass plant requires a wide range of architectural services. HORN® can provide a full scope of such services in collaboration with a highly experienced partner company specialised in architectural design.

# TURN-KEY

---

Project Management

Glass Plants

Architectural Services



## PRODUCTS

---

### PROCESS LINE

---



- Batch Plant & Cullet Return System
- Furnace
- Tin Bath
- Annealing Lehr
- Hot End Automation
- Cutting Line
- Miscellaneous
  - Warehouse Equipment
  - Waste Gas Treatment
  - Laboratory Equipment
  - Raw Material Treatment

### FURNACE TECHNOLOGY

---



- Refractory Material
- Steel Structures
- Combustion System
- Flue Gas Equipment
- Tank Cooling
- Drainage System
- Stirrer Unit
- Control Equipment
- Electric Boosting System
- Batch Charging Machines

# PRODUCTS

---

Process Line

Furnace Technology

Glass Conditioning Technology

Tin Bath Technology

Utilities for Turn-Key Plants

Engineering

Works & Services

Project Management



## GLASS CONDITIONING TECHNOLOGY

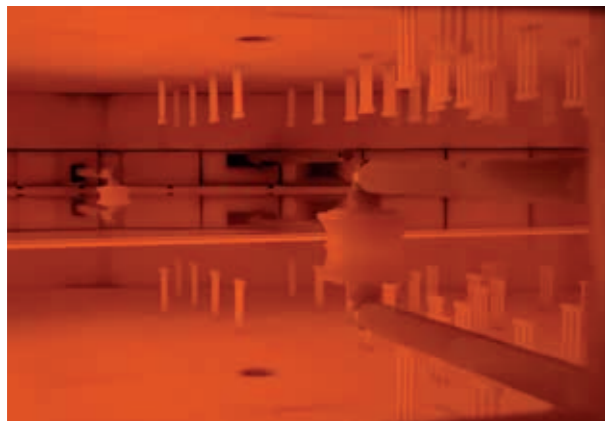
---



- Distributor / Forehearths
- Combustion System CORA®

## TIN BATH TECHNOLOGY

---



- Top Roller
- Dross Box
- Tweel
- Coolers
- Venting System
- Linear Motor
- Graphite Equipment
  - Fences and Pusher
  - Flags

## UTILITIES FOR TURN-KEY PLANTS

---



- Nitrogen Generating Plant
- Hydrogen Generating Plant
- N<sub>2</sub>/H<sub>2</sub> Mixing Station
- SO<sub>2</sub> Station
- Cooling Water
- Compressed Air
- Electric Power Supply

## ENGINEERING

---



- Refractory Engineering
- Steel Engineering
- Computer Modelling

## WORKS & SERVICES

---



- Supervision of Installation
- Installation Works
- Hot Repair Works
- Glass Drain
- Heat Up Services
- Hot Inspection Services

## PROJECT MANAGEMENT

---



- Feasibility Study
- Basic Engineering
- Detailed Engineering
- Site Management
- Operational Support
- Training



# NOTES

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

# NOTES

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

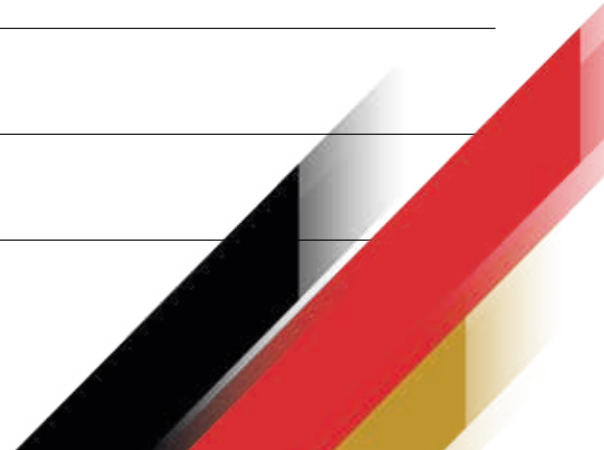
---

---

---

---

---







**HORN**  
GLASS INDUSTRIES

HORN® GLASS INDUSTRIES AG  
BERGSTRASSE 2  
D-95703 PLÖSSBERG/GERMANY

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

[WWW.HORNGLOSS.COM](http://WWW.HORNGLOSS.COM)

12/2021