

# ENGINEERING STEEL

**HORN**  
GLASS INDUSTRIES

*innovation*  
ENGINEERED IN GERMANY

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**After customers have decided on HORN® Glass Industries AG as their competent partner for the construction of their furnace, we start working out each specific concept.**

## THE CONCEPT PHASE IS AS FOLLOWS:

The first step is preparing a layout customised according to the individual requirements of the refractories, measurements, axes and positions of the various components such as:

- Flue gas channel
- Regenerator
- Melting end
- Forehearths
- Forehearth substructure / forehearth platform
- Working and maintenance platforms
- Steel chimney

Subject to the customers' approval, the detailed planning of the refractories concept commences. Simultaneously, in cooperation with the customer, the availability of steel profiles on the local/domestic market is established (accessible profile cross-sections and profile sorts, material quality, etc.).

A HORN® steel design engineer determines the loads for the furnace pillars, the forehearth platform support and substructure, the regenerator and the flue gas channel. Thereupon the engineer examines and establishes the required profile sizes of the various steel components.

Based on these findings, a 3D concept model for the steel bracings and substructures of the respective plant components is prepared according to customer requirements. These models are coordinated to the smallest detail within each specialist department. HORN® uses Autodesk Advance Steel for the modelling.

Simultaneously a 3D layout of the furnace is prepared in Autodesk NavisWorks format. The NavisWorks viewer is made available by Autodesk for free download.

In addition, 3D volume models of the refractory components are prepared.

When the concept and modelling stage is complete, HORN® will, based on the 3D concept model, prepare the complete documentation of the workshop drawings including the steel parts lists and the classification in component groups for simplified and smooth operation and handling during production and construction. HORN® organises the planning from A to Z. Alternatively HORN® can assist in selecting suitable suppliers.

## FEATURES

- **Country-specific profile established according to availability on the domestic market**
- **Static examination of the required profiles**
- **HORN® prepares complete parts lists and organises the planning from A to Z. Alternatively HORN® can assist in selecting suitable suppliers or supply the steel construction**
- **For smooth handling the steel planning is divided into individual component groups**
- **Detailed planning of maintenance platforms (optionally available)**

The assembly drawings show how the individual constructions are processed and assembled. These are then divided into individual component groups according to the individual positioning.

As we know, working and maintenance platforms with corresponding stairs are indispensable for the maintenance of the furnace. Therefore, one layout which contains a proposal for the positioning of the working and maintenance platforms and of the corresponding stairs is created.

Optionally, detailed planning, consisting of workshop drawings including parts lists and assembly plans of the platforms can be prepared.

