

EAF Upgrade at Breitenfeld Edelstahl AG, Austria

From 30 to 65 tons by taking over the roof lifting pivot and the offgas elbow

BSE had been awarded to set a concept to upgrade the existing 30 t furnace to a new 65 t EAF. The main challenge of the project beside the short **project time of less than nine months** was the space availability, which was limited because of the given position of the roof lifting pivot and the fixed offgas elbow.

To get the larger furnace (furnace diameter raises 400 mm) in its limitations, the furnace centre had to be moved towards the offgas side and the foundations had to be modified.

BSE delivered the **entire detail engineering** in consideration of all local circumstances and with the aim to design a reliable and top performing furnace. Also some key components such as electrode columns including stool with fixation and isolation parts, electrode lifting cylinders and the electrode guiding system were delivered by BSE. The manufacturing of the other equipment (furnace, gantry and tilting platform) was made under the customer's scope in Italy and Germany. BSE executed all work, from A to Z including the following equipment modifications:

- **Civil Works** – for placing the new furnace, the foundations had to be modified.
- **EAF** – new EAF tilting platform, upper & lower shell, roof & elbow and electrode lifting system.
- **Electrode Arms** – because of moving the furnace centre 100 mm towards the offgas elbow, an adaptation on the electrode arms had to be done.
- **Hydraulic** – completely new hydraulic unit for the electrode regulation, roof swinging system, tilt lock system and the furnace door.
- **Oxygen System** – new positioning of the existing burners and adjustment of the burners in the new water cooled copper boxes.
- **Delay Recording System** – delivery and installation of the BSE Delay Recording System, which tracks, analyses and reports all furnace delays.
- **Traverse** – to change the upper and lower shell, a traverse was designed.
- **Ladle with ladle car** – because of the new tapping weight the existing ladles and the ladle car had to be adapted.



The equipment was preassembled and tested on-site prior to the shut-down. Breitenfeld had nominated their experienced 'on-site work force' for the installation work while the supervision of commissioning was made by BSE personnel. Within less than nine months from awarding of contract, BSE successfully commissioned the new EAF in Austria. The **implementation** was done **within 18 days of stoppage** (including Christmas and New Year).

Beside the higher tapping weight of 65 tons, the bigger furnace design reduces the refractory consumption, so that Breitenfeld Edelstahl AG extended the production period between the stoppage days in average from nine to fourteen days.

The project was executed to the full satisfaction of Breitenfeld Edelstahl AG. **Excellent engineering work, short stoppage period and professional commissioning made the difference!**

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