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“Open-heart surgery”: Major refurbishment of ArcelorMittal Coking Plant in Ghent successfully completed to the highest safety standards

Carrying out hot end-flue repairs on two coke oven batteries at ArcelorMittal in Ghent, Belgium, was like open-heart surgery. After all, each time seven ovens were taken out of operation while the rest of the

battery was still producing coke. Just how complex the operation was, is indicated by the timeline – over five years from its beginning to its successful and safe conclusion.

At the Ghent coking plant with its 100 coke ovens every fireproof oven wall is subjected to a massive thermal shock each time the red-hot coke is pushed out of the oven. So it's hardly surprising that the ceramic wall linings have to be renewed every five years or so. This time, however, ArcelorMittal decided more extensive repairs were required. Given the magnitude and complexity of the task, they called in thyssenkrupp Uhde Engineering Services (tkUES).

“A historic moment for our coking plant and an emotional moment for all internal and external colleagues involved in the project.”

By the project responsible from the ArcelorMittal Coking Plant, Ghent

A total of 26 blocks had to be repaired, with each block consisting of four refractory walls. On average, it took 8-9 weeks to demolish and reconstruct a block. After all, each wall consisted of at least 2,500 ceramic bricks that had to be taken out and rebuilt one by one. This work was undertaken by a specialist subcontractor tkUES brought in. At any one time, up to 60 SetLinings workmen were on site working in two or three daily shifts from Monday to Saturday. The extensive repairs also included the renewal of buckstays and doorframes and refurbishment of doors, which were cleaned and overhauled before being reinstalled. One of the key competencies required in this project was the operation of an additional heating system in the repair area to prevent a loss of temperature in an oven when the walls of an adjacent brickwork were opened. Another specialist subcontractor called in by tkUES safely removed some asbestos discovered during the demolition work.

The original plan was to complete the hot repair by July 2020. It would have been completed on time if the corona pandemic had not forced the plant to stop all projects in March 2020. But after implementing specific measures to ensure corona-safe working, the project restarted in June and was successfully completed on 30 September 2020. Not only was the repair work a complete success; it was also concluded without any major accidents. A tribute to the thorough safety training conducted for internal and external employees and the safety awareness they displayed day after day.

The ArcelorMittal staff were extremely satisfied with the quality of the repair work. And that was not all. The manager responsible for production and the coking specialist recall “None of us will forget the fine collaboration with the external employees. Over the years, we became like colleagues.





The bottom line: The flue-end repairs on two coke batteries at the ArcelorMittal Coking Plant in Ghent were so extensive they took over five years to complete. Besides demolishing and reconstructing the ovens' 102 refractory walls, buckstays, doorframes and doors were replaced or refurbished. The work was carried out to the customer's complete satisfaction by thyssenkrupp Uhde Engineering Services and its subcontractors – with no major accidents at any time.
