



MAHLER AGS, GERMANY

Key Facts

Company: Mahler AGS, Germany

Website: www.mahler-ags.com

Industry: Oil and Gas, Chemical & Petrochemical

Country: Germany

Products Used:

- CADWorx® Plant Professional
- CAESAR II®

Key Benefits:

- Improved efficiency: Up to 15 percent savings on project work-hours
- Streamlined work processes: Up to 30 percent less hours spent on stress calculations
- Accurate and structured pipe stress analysis
- Fast implementation: Reduced project delay and downtime

MAHLER AGS SIGNIFICANTLY SAVES LABOR HOURS BY UPGRADING TO CADWORX® PLANT PROFESSIONAL AND CAESAR II®

Improved user-friendliness and easier implementation increase efficiency across design and manufacturing processes



Mahler AGS is the leading manufacturer and supplier of cost-effective, safe, and reliable gas generation and purification plants for hydrogen, oxygen, nitrogen, biogas, and protective gas. Mahler AGS offers a variety of cost-effective, onsite plants for users in a wide field of industries. More than 60 years of experience in plant design and engineering guarantee high operational availability of all Mahler AGS gas generation and purification plants.

IDENTIFYING GOALS

Mahler AGS is an international leader in designing and manufacturing hydrogen generation plants, specializing in steam reforming and pressure swing absorption technology. With more than 60 years of experience in the business, the company provides tailored, turn-key solutions for clients across different chemical sectors.

Mahler AGS was employed to design and manufacture a modular hydrogen plant for a leading global company in the palm oil business. The resulting plant is now used to refine crude palm oil and crude palm kernel oil. The plant design is based on Mahler AGS' HYDROFORM-C hydrogen generation plant series. This is Mahler's turnkey plant design solution for hydrogen generating plants, focusing on flexibility and full automation. As part of the modular design principle, Mahler preassembled and delivered the plant as prefabricated units.

Mahler AGS was looking for both a new pipe stress analysis software as well as one to replace its existing design software (X-Plant) that included a modern 3D planning

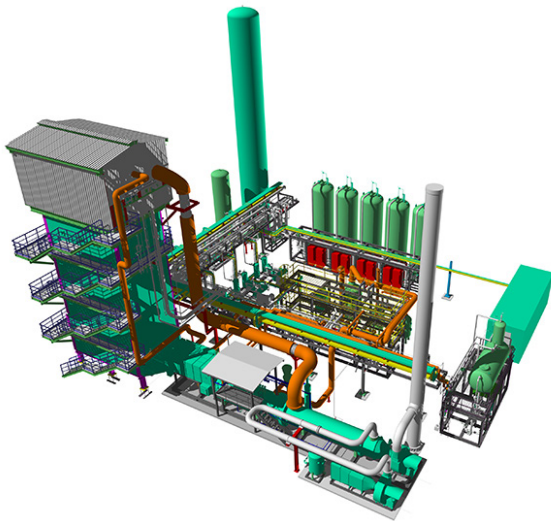


solution. The new system needed to be compatible with the previous AutoCAD-based software, easy-to-use, and fast to implement so it could minimize project downtime and delay. CADWorx® Plant Professional and CAESAR II® were chosen due to their AutoCAD®-based structure, scalability, and suitability for the project scope.

OVERCOMING CHALLENGES

A tight time schedule and mixed existing ASME/DIN EN piping codes affected the design and manufacturing process of the new plant. Meeting the strict project deadlines was ensured by the efficiency and accuracy of CADWorx Plant Professional. As an AutoCAD-based solution, most users already had experience with a similar product and were able to get up-to-speed quickly. Even though this was the first of Mahler's projects using Hexagon PPM solutions, only a short adoption time was needed because training and design were performed in parallel. Due to the ease of use and quick implementation of both CADWorx Plant Professional and CAESAR II, the design for the new plant was completed within approximately five months from the project start date.

CAESAR II was used throughout the project for all of the pipe stress analysis needs, and provided Mahler with a way to ensure the accuracy and safety of the piping specifications and pipe stress analysis.



Mahler AGS Hydrogen Generation Plant - 5000 NM3/H.

REALIZING RESULTS

CADWorx Plant Professional was used to create an intelligent 3D plant model of the new plant, including:

- Intelligent 3D models of equipment, steel structures, and piping
- 2D layout drawings and civil guide drawings
- Isometric drawings
- Bills of material for piping and steel

CAESAR II was used for all piping stress calculations, data sheets, and piping specifications. As a default, CAESAR II creates bi-directional links between plant design and engineering analysis. This enabled Mahler to pass data between different departments without data loss. Training and setup were completed by an employee with previous experience in both CADWorx and CAESAR II. Currently, the CAD department of Mahler has full access to the system.

Ultimately, by choosing CADWorx Plant Professional and CAESAR II, Mahler AGS reduced project work-hours by 10 percent to 15 percent, with an additional 25 percent to 30 percent reduction in time spent on stress calculations. The latter is attributed to the overarching compatibility between Hexagon PPM solutions, requiring fewer model revisions throughout the design process, regardless of the amount of overall changes.

MOVING FORWARD

Following the successful HYDROFORM-C series plant design, Mahler AGS has designed four new plants using Intergraph CADWorx Plant Professional and CAESAR II. The company continues to use the software in all future projects, such as ordered design and manufacture projects for two hydrogen plants, a nitrogen plant, and an oxygen plant.

ABOUT HEXAGON

Hexagon is a global leader in digital solutions that create Autonomous Connected Ecosystems (ACE). Our industry-specific solutions create smart digital realities that improve productivity and quality across manufacturing, infrastructure, safety and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.