



## CASE STUDY

# Godrej PED achieves compliance and record time completion with Octave Aspect Pressure Vessel

### Key facts:

**Company:** Godrej PED

**Website:**  
[www.godrej.com](http://www.godrej.com)

**Industry:** Petrochemical

**Country:** India

**Octave products used:**  
Aspect Pressure Vessel  
(PV Elite)

### Key benefits:

- Reduced code calculation and analysis time, improving the organization's opportunity for growth.
- Facilitated accurate load and support calculations for safe shipping, ensuring structural integrity during transport.
- Expanded capabilities to design complex vessels and exchangers, enhancing growth opportunities and customer satisfaction.

Since its formation in 1897 as a lock and security company, Godrej has grown into an international powerhouse manufacturer and supplier of a broad and diverse array of goods ranging from beauty products and home appliances to materials handling and process equipment. Formed in 1976, the Godrej Process Equipment Division (Godrej PED) manufactures process equipment for end users in the refining, petrochemical, fertilizer, oil and gas, chemicals, pharmaceutical and power industries.

### Identifying goals

Recently, Godrej PED embarked on a project to manufacture the largest single piece of equipment in the company's history, weighing 882 tons (800 metric tons). It was to be designed, fabricated and shipped out of the Mumbai port as a single unit. This polypropylene reactor was to be built for the Saudi Basic Industries Corporation's Ibn Zahr PP-III Project, Jubail Industrial City in Saudi Arabia.

### Overcoming challenges

Before this project, Godrej PED engineers were experienced users of Aspect Pressure Vessel for pressure vessel and exchanger design and analysis. Because of this experience, the company knew that it could rely on these tools to not only perform engineering designs according to international standards, but also produce mechanical designs, code calculations and inputs for fabrication drawings.

### Design and manufacture to the local standards

The polypropylene reactor, which was based on Dow Chemical's technology, measured 156 ft 6 in (47.7 m) in height and 18 ft (5.5 m) inside diameter from the base up to a 29 ft 6 in (9 m) diameter dome that caps the top of the reactor. The shell thicknesses ranged from 3 3/8 in to 4 1/8 in (84 to 105 mm). Aspect Pressure Vessel's comprehensive database of structural steel, pipes, flanges, bolts, etc., helped Godrej PED design, manufacture, supply and test the dome-topped unit to ASME U2-Stamp standards.

*“Aspect Pressure Vessel gives us the flexibility to design towers and exchangers to exacting standards. We can even perform analysis on vessels with exchanger bundles located in a tower.”*

**Rajiv Kulkarni,**  
Assistant General  
Manager, Sales and  
Marketing for  
Godrej PED



## Realizing results

Using Aspect Pressure Vessel, Godrej was able to design and build a viable piece of equipment that took into account operational as well as external boundary factors such as the wind and seismic conditions of the Saudi Arabian Jubail region. Aspect Pressure Vessel also helped Godrej PED perform the equipment's transportation and support analysis to determine the loads and supports needed. With Aspect Pressure Vessel, the engineer could flip the vessel from its operational vertical design state to the horizontal shipping state to calculate transportation loads and ideal support positions. This was achieved without the engineer needing to redesign the equipment, which is often the case with other approaches.

Aspect Pressure Vessel has helped Godrej PED deliver what clients require while significantly reducing the time taken on code calculations and essential wind and seismic analyses. This has improved Godrej

PED's opportunities for growth and increased the company's list of satisfied customers. "We design and build complex vessels, and Aspect Pressure Vessel gives us the flexibility to design towers and exchangers to exacting standards," said Rajiv Kulkarni, assistant general manager, Sales and Marketing for Godrej PED. "We are not limited to TEMA-type shell and tube exchangers; we can even perform analysis on vessels with exchanger bundles located in a tower."

## About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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