



# Gulf Signature Contracting Company

## API Solutions Division



[www.gulfsig.com](http://www.gulfsig.com)  
[www.apiadvancesolutions.com](http://www.apiadvancesolutions.com)

## About GSAPIS

**GSC Contracting Company** was established in 2021. It is recognized as one of the leading local Engineering Procurement Construction and Plant Maintenance company in the Kingdom of Saudi Arabia for its exceptional performance in the utilities, oil & gas, power generation, petrochemical, energy and manufacturing industries.

**For diverse and advanced engineering solutions GSC developed a division with name of GSAPIS Solutions, which is provide all advanced process industry's solutions.**

### GSAPIS OBJECTIVE



*GSAPIS Solutions is a diverse group of businesses that have been able to solve chronic problems. Our engineering network covers the world, and we have research and development facilities, comprehensive aftermarket support, and a technical core team to meet your needs as they change with your business.*



**Chemicals**



**Refineries**

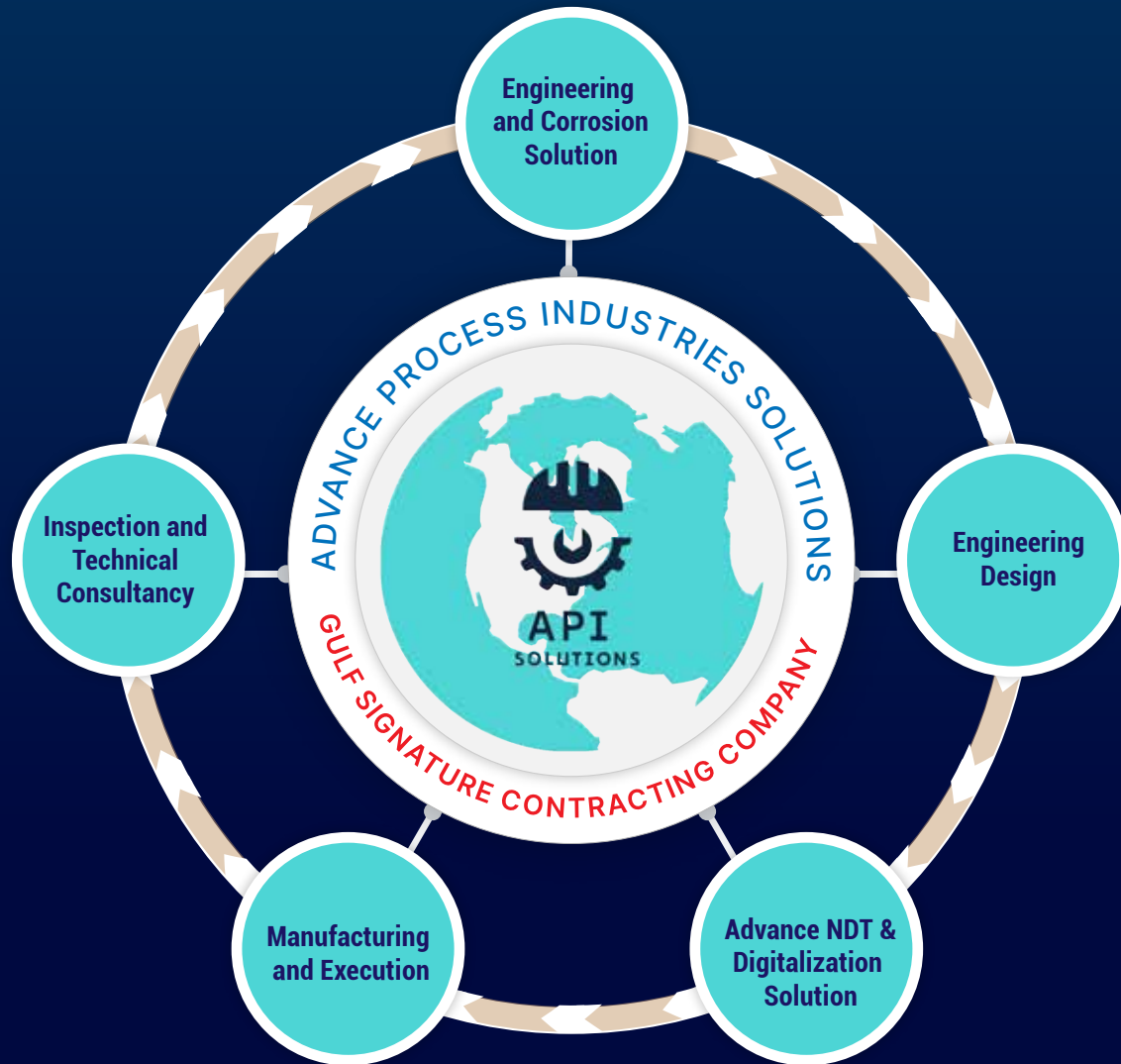


**Utilities**



**Power & Energy**

# A One Window Solution



## Our Services

- **Engineering and Corrosion solution**
- **Manufacturing & Execution**
- **Engineering Design**
- **Inspection & Technical Consultancy**
- **Advanced NDT & Digitalization**

## Engineering And Corrosion Solution

**Comprehensive Support Services:** Offering end-to-end support, from initial design and feasibility studies to installation, maintenance, and optimization, ensuring the longevity and reliability of mechanical systems through their entire lifecycle.

**Custom Engineering Solutions:** Providing tailored design services for complex mechanical systems and equipment used in the chemical and oil & gas industries, ensuring that all solutions meet specific client needs and industry standards.

**Material Selection:** Provide material selection and corrosion study during construction (green project) and material selection as corrosion mitigation in brown projects. Ensure material compatibility with specific chemicals and operating conditions to minimize corrosion risks.

**Failure Analysis and Risk Management:** Conduct thorough failure analysis to identify the root causes of corrosion-related failures. Implement risk management strategies to mitigate the impact of corrosion on operations.

**Corrosion Management Solutions:** Provide a range of management solutions to prevent corrosion failures. Corrosion control documents (CCDs), Corrosion Loops, Integrity Operating Windows (IOWs also known as CPPs (Critical Process Parameters)), Piping circuits and corrosion Isometrics.

**Protective Coatings and Linings:** Provide a range of protective coatings and linings solutions to prevent corrosion in pipelines, tanks, and equipment. Provide latest and high-performance coatings resistant to chemicals, high temperatures, and mechanical wear streams.

## Scope of GSAPIS Services

Our range of major products includes:

- Corrosion Under Pipe Support (CUPS) Solution with the latest and diverse Lift of pipe Technology, with advance solution of Non-metallic support to avoid CUPS.

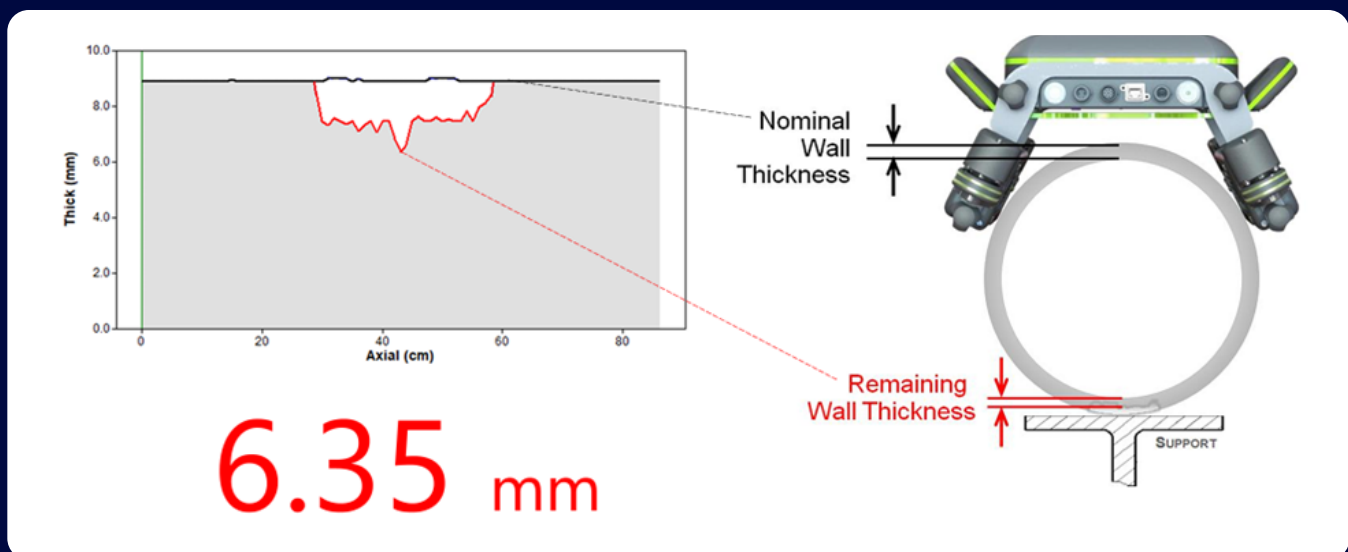


PA-CAT Process Chart

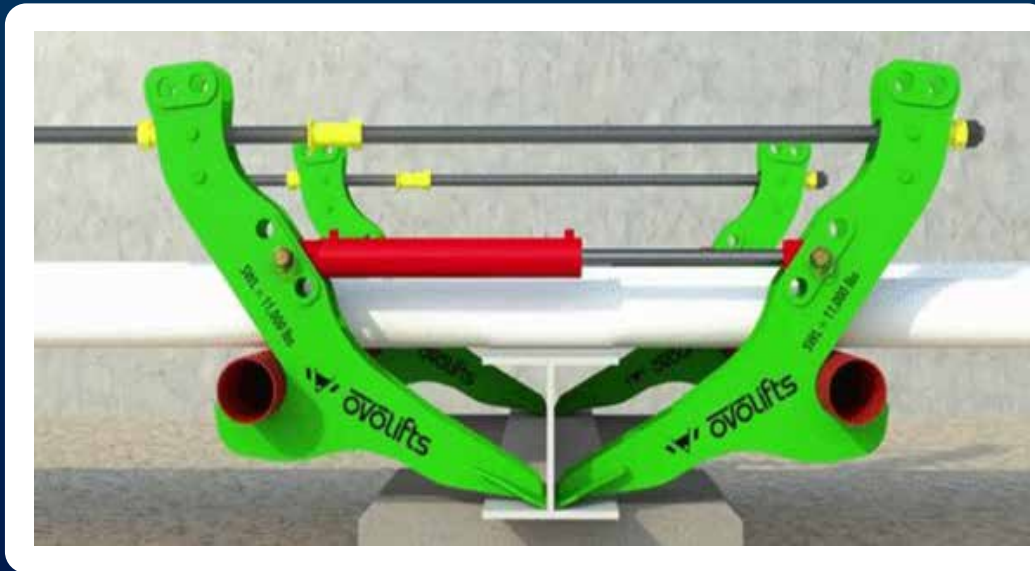
PA-CAT™: Measurement of Metal Loss at Pipe Supports Using an Innovative Phased Array Approach



Corrosion Under Pipe Support (CUPS)

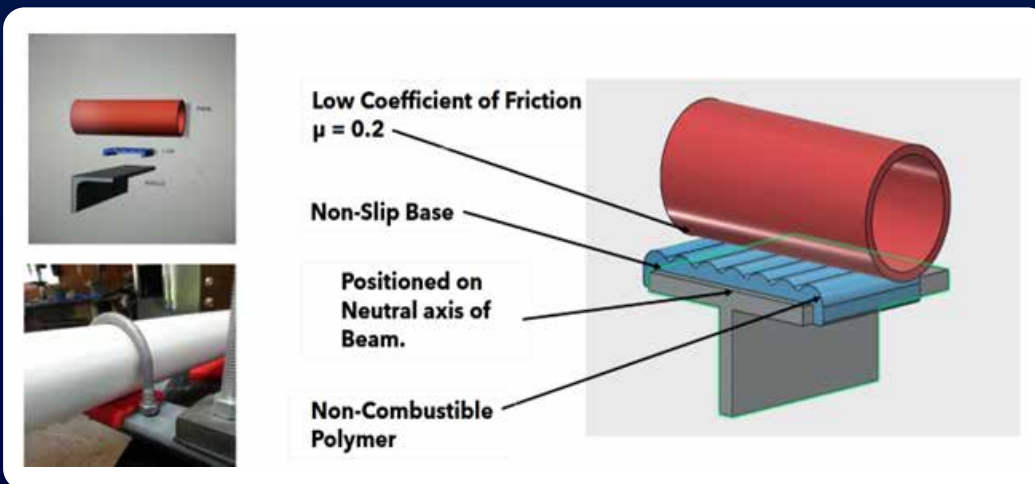


Sizing of Corrosion under Pipe Supports (CUPS) using the QSR1®

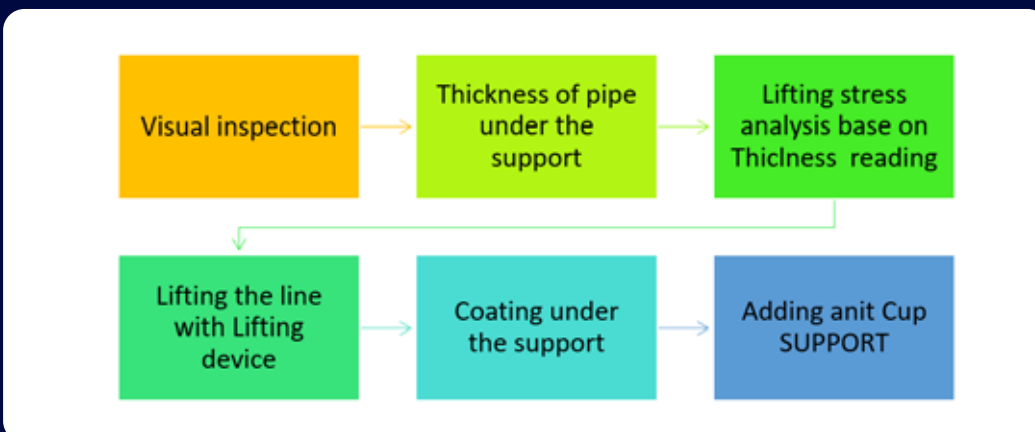


**Stress Analysis**

Lifting and coating after accepted stress analysis bases on the thickness under support



Solution to use the nonmetallic pad which eliminate the Corrosion under support problems



Carrion under support solution flow

- Corrosion control documents (CCDs), Corrosion Loops, Integrity Operating Windows (IOWs), also known as CPPs (Critical Process Parameters), Piping circuits and corrosion Isometrics.

- Corrosion Under Insulation (CUI) Solution

- Corrosion Detection system under insulation
- On-stream CUI Inspection with advanced NDT technology
- Mascoat Coating (coatings systems which are Insulation Alternatives)
- Coating for Marine Environment and Wet Surfaces
- Coating and lining for Pipe, Tanks, and Pressure Vessels



Providing advanced technique to inspect corrosion under insulation.

- Manufacturing and Repair of FRP/PTFE/FEP/PFA Pressure Vessels, Tanks, and exchangers

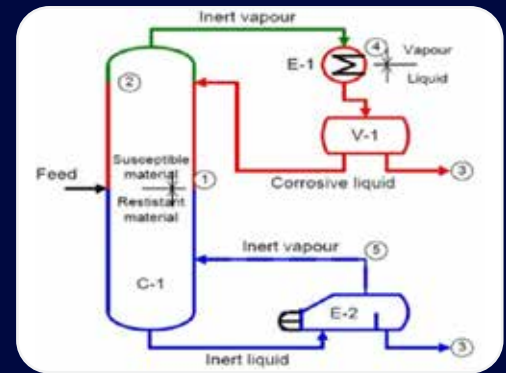
- FRP and rubber lining of Tanks and Pressure Vessels
- Plastic (PTFE, FEP, PFA, ETFE, PP, HDPE) Lining
- FRP Products (Pipes, pressure vessels, Tanks) for the chemical industry like Scrubber / Chlorine Plant, Brine, and caustic plants. Using mostly the resins Furan, Hetron-197, 922, Derakane-470, 411, etc.



Providing Corrosion solution with nonmetallic lining such as FRP/PTFE/FEP/PFA Pressure Vessels, Tanks, and exchangers with expert team.



Corrosion control documents preparation expert team for oil and GAS Plants.



Corrosion control looping preparation expert team for oil and GAS Plants

## Engineering Design

**Comprehensive Design Services:** Conceptual design and feasibility studies. Detailed engineering design, including piping, vessels, and structures. Equipment selection and specification.

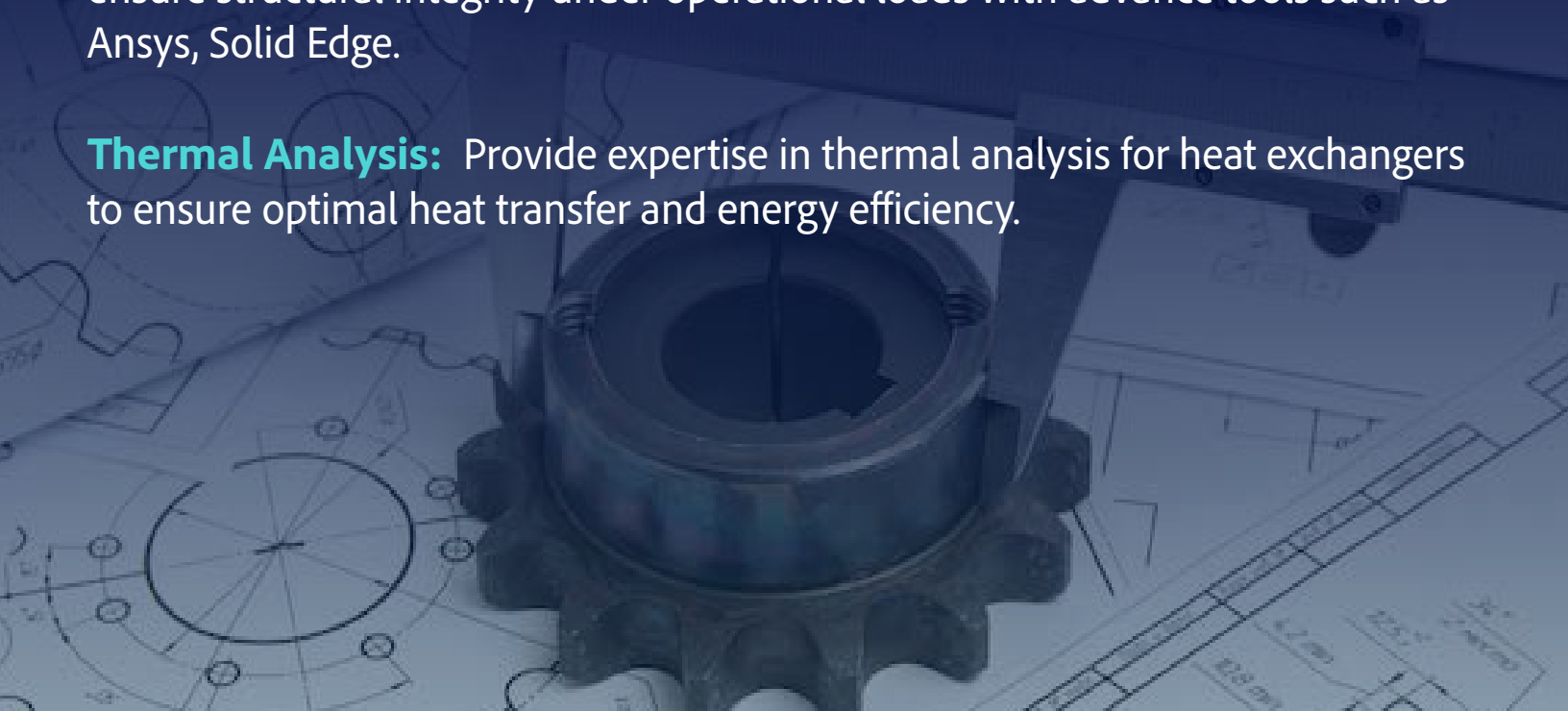
**Lifecycle Support:** Provide engineering solution to extend the design life, including fitness for services (FFS) study, maintenance and operational support. Assistance with modifications and upgrades as needed throughout the plant's life.

**Process Equipment Design:** Design, development and upgrade support for new and existing equipment like separators, heat exchangers, vessels and tanks using advance software such as PV Elliot and Ceaser.

**Piping System Design:** Design of robust piping systems to ensure efficient fluid transport, considering thermal expansion and pressure variations.

**Stress Analysis:** Conducting detailed stress analysis on critical components to ensure structural integrity under operational loads with advance tools such as Ansys, Solid Edge.

**Thermal Analysis:** Provide expertise in thermal analysis for heat exchangers to ensure optimal heat transfer and energy efficiency.

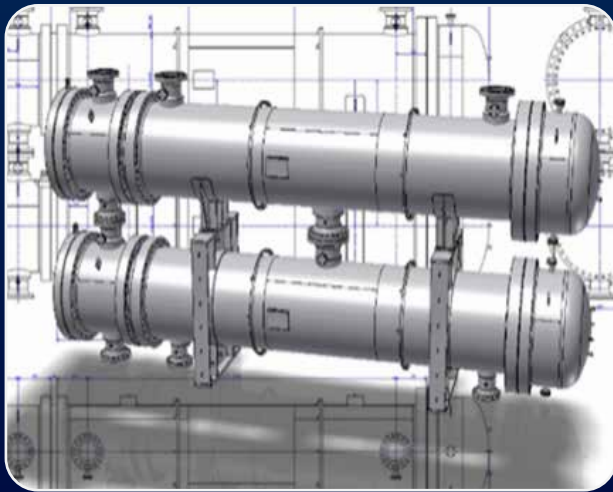




## Scope of GSAPIS Services

Our range of major products includes:

- 3D Modeling through the latest software

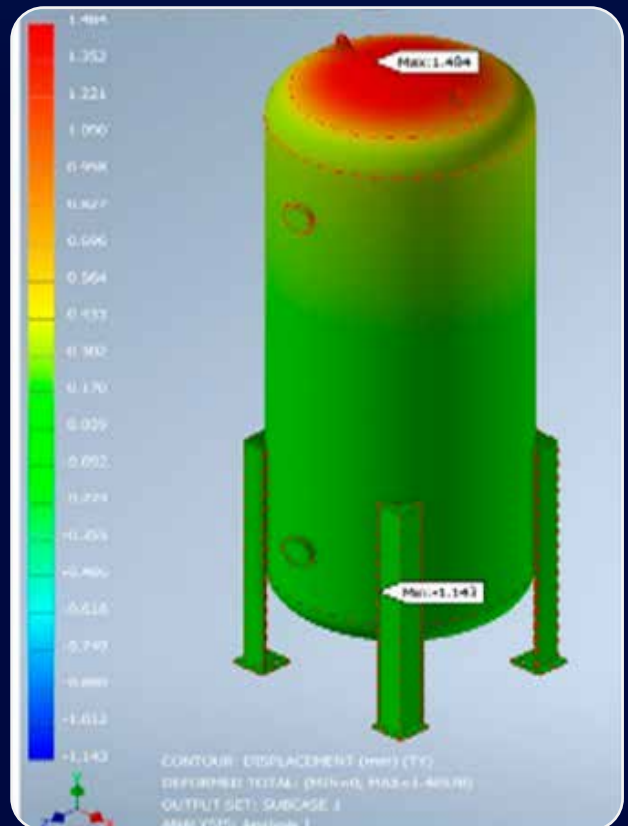


Engineering expert team for designing Presser vessel, heat exchanger and skids.



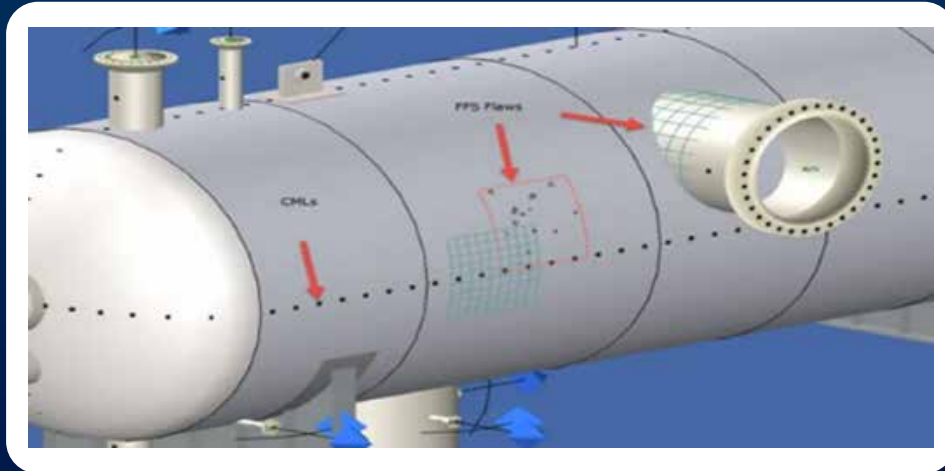
Engineering expert team to deliver a 3D Plant modeling.

- Design pressure vessels, tanks, piping, skids, structures, and heat exchangers using proven software such as PV Elite, Caesar, and Compress.
- Perform finite element analysis (stress analysis) using the latest version of ANSYS.



Experienced engineer for finite element analysis by ANSYS Software

- Assess the fitness for service of pressure equipment.



Experienced design engineer performed Fitness for service assessment of pressure equipment as per API 579

- Evaluate the remaining life of aged equipment. (Asset life assessment)
- Design nonmetallic piping systems.
- Qualified design team to build the missing drawing.
- Qualified design team to design any change /modification in the plant.



Matter expert to performed Asset life assessment (ALA study)



Technical engineering team to designed nonmetallic (FRP and PP/PTFE dual lamination) piping systems.

## Inspection And Technical Consultancy

**Inspection Services:** Provide Regular and periodic inspection solutions for pipelines, storage tanks, and equipment. Corrosion monitoring and management. Third-party inspection services to ensure compliance with international standards. Special Inspection services for non-metallics such as FRP (GRP) or (RTRs), rubber lining HDPE/PERT/ polymer materials

**Non-destructive testing (NDT) Services :** Ultrasonic (UT), radiographic (RT), magnetic particle (MT), and dye penetrant (PT) NDT services.

**Technical Consultancy:** Feasibility studies and project evaluation. Risk assessment and management. Technical audits and due diligence. Expert advice on industry standards. Provide FRP design review consultancy.

**Quality Assurance and Quality Control (QA/QC):** Development and implementation of QA/QC for construction and plant maintenance. Vendor and contractor quality audits. Inspection and test plans (ITPs) and procedures. Certification and documentation review. Support in development of PQRs and WPS for all metals.



## Scope of GSAPIS Services

Our range of major products includes:

- NDT Team for (UT,DPT, MT and RT).
- Tank's onstream Inspection without Opening.
- Precisely Thickness measurement with Drones.
- Corrosion Detection and Wall Thickness Measurement.



Capability to performed Phased Array Ultrasonic Testing (PAUT)



NDT Team to perform the Magnetic particles test ( MT), Dye Penetrant Test (DPT)

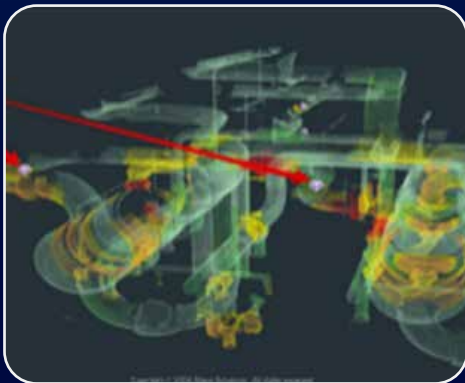


Specialized to perform Tank's on-stream Inspection without Opening

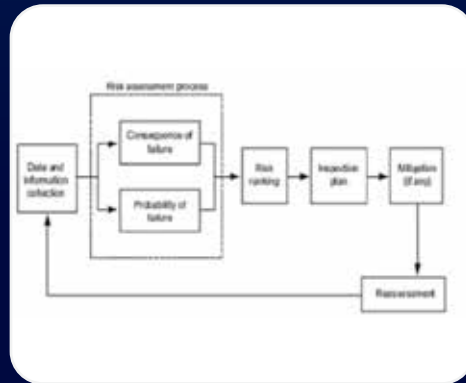


Precisely Thickness measurement with Drones.

- FRP Inspection with experts team and utilize special NDT techniques.
- FRP and nonmetallic of piping, tanks, pressures vessel design and inspection consultancy. (Qualified FRP/nonmetallic inspectors and consultant team).
- Refractory inspection and design consultancy. (Qualified refractory inspectors and consultant team).
- Third party services for Refractory and FRP inspector/applicators qualifications).
- We offered Qualified Vendor inspectors around the world for third party inspection services.
- Qualified API inspectors teams services for Turnaround and shutdown services.
- Qualified Inspection and technical team to provide services for development of quality procedures, inspections test plan, and welding procedures.
- Risk base inspection (RBI) team services for new commissioned and old plant.
- Qualified technical team for build up Bill of materials (BOM) for new and old plants.



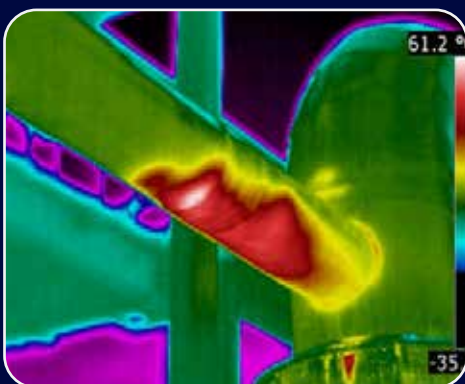
Laser scanning for detection of coating damaged, Corrosion under insulation and corrosion under support by utilizing ABYSS advance laser scanning technology.



Risk base inspection (RBI) team services for new commissioned and old plant.



Qualified technical team for build up Bill of materials (BOM) for new and old plants.



FRP thermography inspection



FRP Borescope inspection



Visual inspection of FRP ,discoloration, Cracks, ultraviolet coating damaged and pipe support inspection

## Maintenance, Manufacturing And Execution

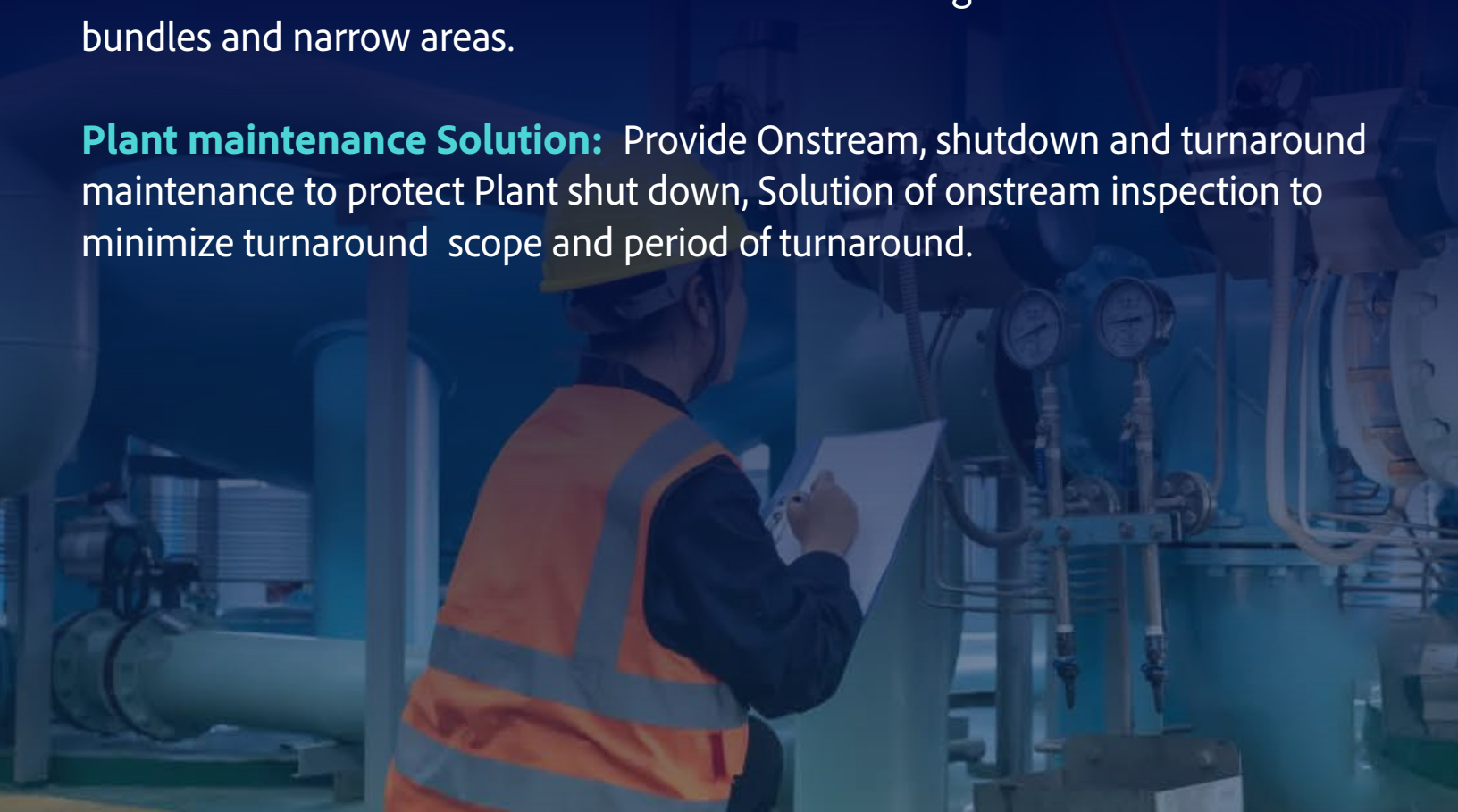
**Procurement Services:** Provide procurement services to ensure high-quality components and materials are supplied timely for project execution. Such as Heat Exchanges, PSVs, Valves include special streams like chlorine valve.

**Manufacturing:** Manufacturing of pressure vessels, tanks and heat exchangers with industry standards such as ASME, API, and PED.

**Vendor Management:** Experience in selecting and managing suppliers and subcontractors for components and services essential to equipment manufacturing.

**Welding Expertise:** Proficiency in advanced welding techniques suitable for high-strength and high-temperature applications, including TIG and MIG welding. QA/QC for all aspect welding. Special Weld overlay services for corrosive vessels and nozzles. Advance orbital welding services for tube bundles and narrow areas.

**Plant maintenance Solution:** Provide Onstream, shutdown and turnaround maintenance to protect Plant shut down, Solution of onstream inspection to minimize turnaround scope and period of turnaround.

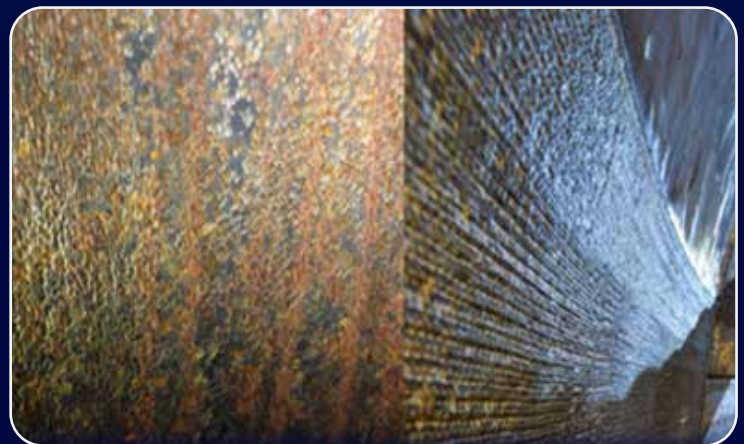


## Scope of GSAPIS Services

Our range of major products includes:

### Automated and Mechanized weld overlay Solution

- We provided superior corrosion/erosion protection of pressure vessel.
- We offered auto grinding mechanized / Automated TIG & Orbital welding solutions onsite for highest possible quality requirements.
- Advanced manual welding repairs and replacements of components Refurbishment, repair & corrosion protection of internal diameter small bore nozzles Corrosion Resistant Overlay welding of pressure vessel, Columns.
- Internationals advanced welding technology for orbital narrow gap welding with optimized metallurgical properties. Advanced orbital welding solutions that can be tailored for multiple applications. A technology specially developed for the highest quality requirements.



- Manufacturing and Repair of Pressure Vessels, Columns, Heat Exchangers, Tanks & Pipes
- Online leak arresting.
  - a. Non-metallic wrapping repair technology.
  - b. Mechanical clamp technology.
  - c. Metal stitch technology.
- Manufacturing and Repair of FRP, GRP /Plastic (PTFE, FEP, PFA, ETFE, PP, HDPE) lining pressure vessels Tanks & Pipes.
- Any materials Weld Overlay Execution with Automatic Machines.
- FRP Fittings Manufacturing
- Execution for PERT & HDPE Liners with latest Technology
- Plant stationary and rotating equipment Maintenance.
- Manufacturing and Execution of FRP Products in chemical plants (Hetron-197, 922, Derakane-470, 411)
- Manufacturing and Execution of FRP Chloro-Alkali Process Piping



Pressure vessel manufacturing

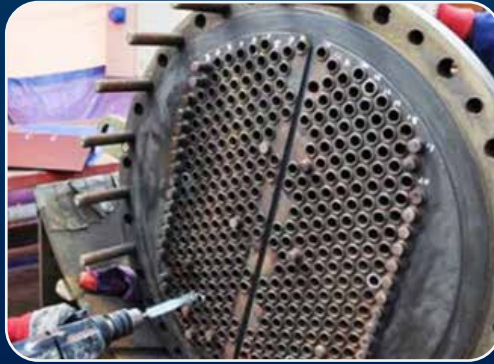


Heat exchanger manufacturing

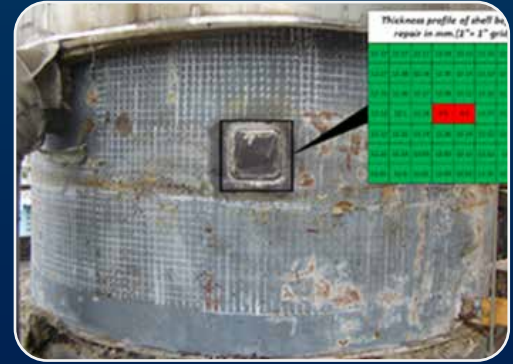




Column manufacturing



Exchanger tubes pulling and replacement



Online repair of pressure equipment



Online repair of pressure equipment



Online repair of pressure equipment



FRP Piping Solutions



FRP pressure vessels and tanks



FRP Pipe and fitting supplied



Plastic welding, Polypropylene, HDPE, PVC/CPVC, PVDF, FEP/PFA



FRP Piping repair jobs



FRP Piping repair jobs



FRP Piping repair jobs

## Advanced NDT And Digitalization

**Predictive Maintenance:** Utilize advanced Monitoring technologies and data analytics to predict equipment deterioration rates before failure occurs, minimizing downtime and reducing maintenance costs. Monitoring include corrosion, temperatures, pH, Iron content, oxygen content, strain gauges.

**Condition Monitoring Systems:** Install real-time monitoring systems to continuously assess the health of critical machinery, allowing for timely interventions and repairs. Vibration monitoring, spring support monitoring and adjustments.

**High-Sensitivity Detection Technologies:** Employ state-of-the-art leak detection technologies, such as infrared cameras and acoustic sensors, to identify leaks at the earliest possible stage. Drone technology and robotic technology for tank inspection.



## Scope of GSAPIS Services

Our range of major products includes:

- Digital Radiography Testing (DRT)
- Digital Ultrasonic Testing (DUT)
- NDT of FRP Piping inspection.
- Digital Equipment PA-CAT & QSR for detection of corrosion under pipe support (CUPS) and measurement of minimum remaining thickness (MRT).



## Contact Us

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