



TECHNITAS

DESIGN AND DETAIL ENGINEERING FOR MODULAR PROCESS SKIDS



ABOUT US

Kavya TECHNITAS Pvt. Ltd. shares its stage amongst being one of the pioneering companies for offering a combination of services in the Engineering & Management segment. We offer design and detail engineering for small and medium sized plants and skid mounted process packages for a wide range of industrial applications. KAVYA LLC formerly based in Abu-Dhabi U.A.E registered in the Year 2009 expanded its operations to Vadodara, Gujarat - India in the year 2014. Our Engineering Services business concept is based on early involvement in our customer business development offering complete multi-discipline services catering to the needs of our clients based worldwide

VISION

To be the preferred partners with our Clients/Package Vendors, delivering challenging Projects and achieving highest level of satisfaction for our Clients & Other EPC Stake owners.

MISSION

To deliver Quality Engineering & Project Management Services to the Oil & Gas, Power & Water Treatment Industries, in a manner that is reliable, sustainable, competitive, flexible & customised to the project needs promoting business relationship on long term basis



MARKET SEGMENTS

Technitas has a diversified portfolio by delivering design and detail engineering services under one roof and catering to the design needs of various market segments including:



Oil and Gas.



Petrochemical.



Environmental and Waste Treatment.



Pharmaceutical.



Chemical Industries and Other Market Segments.



OUR COMMITMENT

ISO 9001

Our certified management system ISO 9001 is put in place to ensure effective planning within the organization with adequate operational control of the Processes and excellent delivery to our client



Safety Management System

OHSAS 18001

Occupational Health & Safety OHSAS 18001 provides a framework that ensures the continuous identification & Control of Occupational health and safety risks, the reduction of the accident and the improving of the working environment in compliance with the applicable occupational health and safety rules and regulations.

A photograph of an industrial refinery or chemical plant. The scene features several tall, vertical distillation columns and complex networks of pipes, ladders, and structural steel. A red flame detector is visible on top of one of the columns. The sky is a clear, bright blue. In the foreground, a large white rounded rectangle with a yellow border contains the word "SERVICES" in bold, dark blue capital letters.

SERVICES

SERVICES



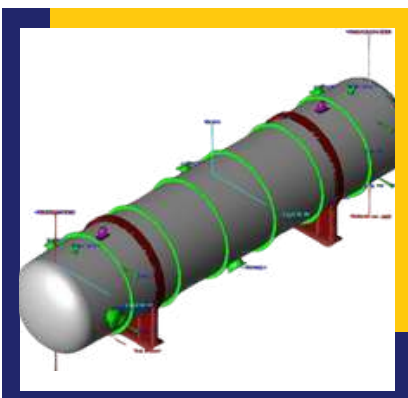
PRE-BID ENGINEERING

Our team of qualified Engineers will review project specifications, and prepare preliminary drawings, and technical datasheets to estimate costs accurately. Site visits are conducted to assess potential risks and challenges. Alternative solutions are proposed to optimize project delivery. This proactive approach enhances the competitiveness of the bid and contributes to successful project execution.



PROCESS DESIGN ENGINEERING

Our Process engineers carefully analyze the chemical and physical transformations involved, appropriately size equipment, and develop efficient flow diagrams. They utilize computer simulations, thermodynamic calculations, and process control strategies to ensure safe, economical, and environmentally sustainable operations.



STATIC EQUIPMENT DESIGN

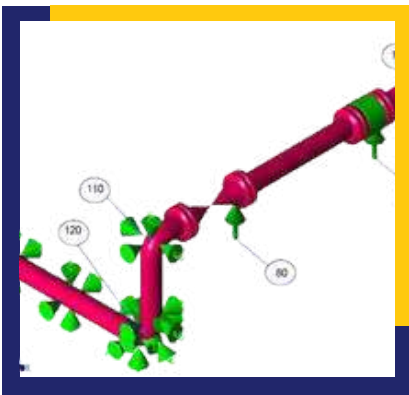
Includes the design and detailed engineering of storage tanks, pressure vessels, heat exchangers, columns, and reactors. Our team of dedicated Static equipment designers carefully analyze factors such as material thickness, pressure and temperature ratings, corrosion resistance, and mechanical stress. They follow established codes and standards to ensure clarity in their documentation and fabrication drawings.

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PIPING DESIGN ENGINEERING

Piping design involves determining pipe sizes, wall thicknesses, support structures, and insulation requirements. Proper piping design and routing are crucial for maintaining process integrity, minimizing leaks, and facilitating maintenance in industries like oil and gas, chemical processing, and power generation.



PIPE STRESS ANALYSIS

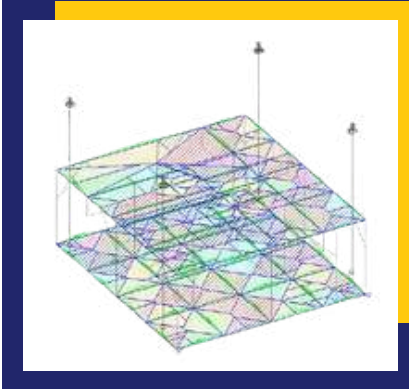
Evaluating the mechanical stresses and deformations that piping systems may experience due to various loads and operating conditions. To predict the behavior of piping networks under thermal, pressure, weight, and seismic loads stress flexibility analysis helps identify potential areas of high stress concentration, assess the risk of pipe failure or leakage, and determine the need for additional supports or flexibility provisions.



3D MODELLING

3D modelling plays a crucial role in the design and visualization of piping systems and industrial plants. Using specialized computer-aided design (CAD) software, our engineers are well-experienced to create detailed 3D models that accurately depict the intricate network of pipes, equipment, and structural components. These virtual models enable comprehensive planning and interference checking, and to precisely represent the routing, dimensions, and connections, facilitating fabrication and installation processes.

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STRUCTURAL DESIGN

The structural design of skid frames is critical to ensure safe handling, transportation, and installation. Our Engineers perform detailed analyses to determine the appropriate section sizes, dimensions, and reinforcements required to withstand various loads, such as equipment weight, piping stresses, and transportation forces. Skid frame designs incorporate features like lifting lugs, tie-down points, and support structures to facilitate secure lifting and anchoring. Modularization and the use of skid frames streamline construction, reduce site work, and enhance quality control.



FINITE ELEMENT ANALYSIS

At Technitas we carryout Finite element to analyse the behaviour and performance of engineered systems and components under various loading conditions analysis (Static / Dynamic / Modal/ Thermal and Fatigue). It involves dividing complex geometries into smaller, interconnected elements and applying mathematical models to analyze stresses, deformations, and structural integrity.



COMPUTATIONAL FLUID DYNAMICS

CFD simulations provide insights into fluid behavior, allowing our engineers to optimize designs, predict performance, and visualize complex flow patterns. It utilizes numerical methods and algorithms to analyze and solve problems involving fluid flow, heat transfer, and related phenomena.

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REGISTERED PROFESSIONAL ENGINEERING ICS

In partnership with our Canadian Associate, we can facilitate a qualified professionally registered engineer to review and approve engineering drawings, designs, and calculations, as well as oversee and certify projects. P.E. licensure is a mark of professional credibility and is often required for engineering roles in various sectors, including consulting, government, construction, and manufacturing in the USA & provinces of Canada.



PROCUREMENT SUPPORT ENGINEERING

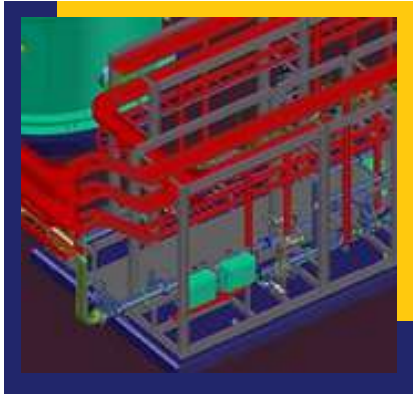
Our procurement engineers collaborate closely with project teams, designers, and vendors to ensure that technical specifications, quality standards, and compliance requirements are accurately defined and communicated during the procurement process. They perform technical bid analyses and ensures that the procured items meet the necessary technical and functional criteria.



VENDOR VISITS

At Technitas Pvt. Ltd., we synergize with clients, performing vendor visits during critical equipment fabrication to ensure quality assurance and project execution. These visits involve ensuring design code compliance, conformity to project specifications, reviewing quality procedures and welding processes, verifying material compliance, witnessing critical stages per inspection plans, anticipating bottlenecks and recommending remedial actions, and reviewing final QA/QC dossiers before shipment release.

SERVICES



ELECTRICAL AND INSTRUMENTATION

Our Electrical and instrumentation engineers work closely to ensure seamless integration, proper grounding, and intrinsic safety in hazardous areas, looking into all the automation and control systems requirements for the project which include the preparation of wiring and loop diagrams for power distribution systems, motor control centers, and Junction box connections to ensure efficient and reliable power supply. Our Instrumentation engineers, on the other hand, are responsible for preparing datasheets for various instruments and sensors used for monitoring and controlling process variables such as temperature, pressure, flow, and level. They integrate these instruments with programmable logic controllers (PLCs), distributed control systems (DCS), and supervisory control and data acquisition (SCADA) systems to enable automated process control and data acquisition.

A full-page background image showing a worker in profile, wearing a white hard hat and a dark blue safety vest with reflective yellow stripes. The worker is holding a tablet computer and looking at the screen. In the background, there is an industrial facility with tall distillation columns and various pipes, illuminated by warm lights against a clear blue sky.

PROJECTS

PROJECTS

PRODUCED WATER TREATMENT



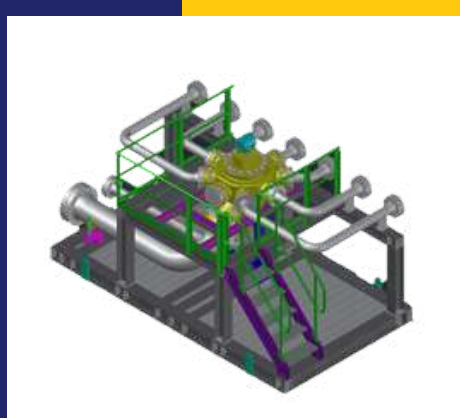
Produced water treatment modular process skids are pre-engineered and pre-fabricated units designed for efficient treatment of water produced during oil and gas operations. These skid-mounted systems integrate various treatment processes like separators, hydrocyclones, filters, and disinfection units into a compact footprint. Their modular nature allows for easy transportation, installation, and operation at remote well sites. With process automation and monitoring capabilities, these skids enable cost-effective and environmental-friendly management of produced water.

GLYCOL DEHYDRATION MODULAR SKID PACKAGE



Glycol dehydration modular process skids are compact and pre-assembled units designed for natural gas dehydration at production sites. They integrate a glycol contactor, glycol regeneration package, and associated equipment into a skid-mounted configuration. These skids remove moisture from raw natural gas using triethylene glycol or diethylene glycol as the dehydrating agent. Their modular design enables easy transportation, installation, and relocation, making them suitable for remote oil and gas operations.

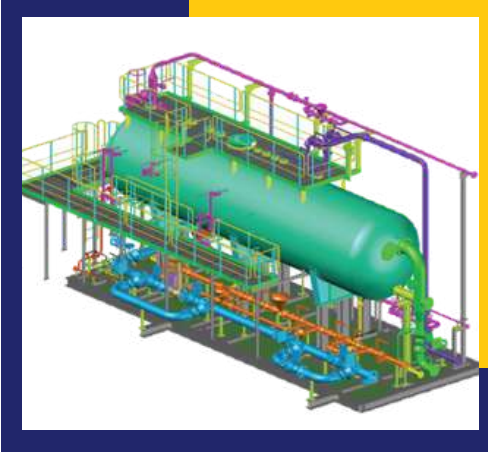
MULTI-PORT VALVE SELECTION MANIFOLD SKID



Multiport valve modular process skids are pre-engineered and skid-mounted systems designed for efficient fluid handling and distribution. They integrate multiple valves, piping manifolds, and instrumentation into a compact footprint. The multiport valves allow for precise routing and control of process fluids through various flow paths. These modular skids offer plug-and-play installation, enabling easy integration into existing process facilities. Their modular nature also facilitates transportation to remote sites and future relocation or expansion.

PROJECTS

THREE PHASE SEPARATOR MODULAR PROCESS SKID



Three phase separator modular process skids are pre-fabricated and skid-mounted units designed for efficient separation of oil, water, and gas streams. These skids integrate a three-phase separator vessel along with inlet and outlet piping, valves, and instrumentation into a compact footprint. The separator utilizes gravity settling and impingement to split the well stream into its constituent phases. The modular design allows for easy transportation and installation at remote production sites. These skids enable efficient handling and routing of the separated phases for further processing or disposal.

FLOW METERING SKID



Flow metering skids are pre-engineered and skid-mounted systems designed for accurate measurement and monitoring of fluid flow rates. These skids integrate various flow metering technologies, such as orifice plates, turbine meters, Coriolis meters, or ultrasonic meters, along with associated instrumentation and control systems. The modular design allows for easy installation and integration into existing process lines or production facilities. Flow metering skids provide reliable and real-time data on fluid flow rates, enabling precise monitoring, control, and optimization of process operations. Their compact footprint and plug-and-play nature make them suitable for both permanent and temporary metering applications.

EARLY PRODUCTION FACILITY



Technitas Pvt. Ltd. has completed in-house design and detail engineering for 5000 BPD, 10000 BPD & 20000 BPD early production facility (EPF) for sweet and sour crude oil and gas processing system deployed during the initial phase of field development. EPFs allow for early monetization of reserves by providing basic processing capabilities like separation, dehydration, and stabilization of well fluids. These skid-mounted or modular facilities have a compact footprint and can be rapidly installed at remote sites. EPFs bridge the gap between initial well flow and the commissioning of permanent production infrastructure, enabling accelerated revenue generation while optimizing development costs.

PROJECTS

FITNESS FOR SERVICE



Fitness for Service (FFS) is an evaluation methodology typically used to determine the integrity and remaining life of aging or damaged process equipment and pipelines. At Technitas Pvt. Ltd, FFS assessments combine inspection data, material properties, operating conditions, and fracture mechanics principles to quantify the tolerance of identified flaws or degradation. These engineering evaluations provide a rational basis for determining whether components can continue to operate safely or require repair or replacement. FFS is a valuable tool for optimizing maintenance strategies, extending asset life, and ensuring safe operations in various industries.

OUR END CLIENT / EPCS



SIEMENS





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